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ANNUAL REPORT OF THE U. S. LIFE-SAVING SERVICE.

The report of S. I. Kimball, general superintendent of the life-saving service, for the fiscal year ended June 30, exhibits the most satisfactory results yet accomplished by the service. Although the total number of disasters was greater than any previous year, the percentage of lives and property lost was less. At the close of the year the department comprised 256 stations. The number of disasters to documented vessels within the scope of the service was 437, involving 4,608 persons, of which 4,595 were saved and 13 lost. The estimated value of the vessels was \$3,880,140, and of the cargoes \$3,846,380, aggregating a total of \$12,726,520. Of this amount \$1,432,750 was lost. The number of documented vessels totally lost was 67. There were also during the year 243 casualties to undocumented craft, sailboats, rowboats, etc. Of 594 persons on board 587 were saved and 7 lost. The value of the property in those casualties is estimated at \$119,265, of which \$114,915 was saved. The total number of persons succored at stations was 613. The total number of days' succor afforded was 1,436. Other persons on board vessels to the number of 82 were rescued from drowning, all of whom would probably have perished but for the vigilance and prompt assistance of the life-saving crew.

During the year the crews saved and assisted to save 472 vessels, valued, with their cargoes, at \$4,853,110. Of this number 318 were saved without outside assistance, aggregating, with their cargoes, a value of \$977,495, with loss of only \$11,713. In the remaining 154 instances the life-saving crews assisted other agencies in saving property valued at \$3,599,775 out of a total of \$3,875,615 imperiled. Less important assistance was rendered to 167 other vessels in distress. The patrolmen also warned from danger by their night signals 210 vessels and by day signals 19. The loss of life and property averted in these 219 instances of course can not be estimated, but the circumstances under which a large portion of the warnings were made indicate that it must have been very considerable. The cost of maintaining the service for the year was \$1,401,805. Attention is invited to the inadequacy of the compensation of the superintendents of life-saving districts and their crews.

WATER-TUBE VERSUS CYLINDRICAL BOILERS.

The Navy Bureau of Steam Engineering has been making tests for some time past of two different types of water-tube boilers. The question of the water-tube boiler is one that is absorbing the attention of the designers of naval machinery, and the aim is to get a boiler which, while being reasonably light, shall be capable of easy repair in case of a ruptured tube, and contain so much water that a slight derangement of the feed apparatus will not result in burning out the boiler. The tests made by the Engineering Bureau were on steamers on the Great Lakes. The first steamer experimented with was fitted with Belleville boilers, the second with Babcock & Wilcox boilers. For the purpose of comparing the results in the latter case with what might be expected from ordinary cylindrical boilers under similar conditions of service a like test was made on another steamer, identical with the one equipped with Babcock & Wilcox boilers, in every respect alike except the boilers. As a result of these tests it was decided to put a Babcock & Wilcox boiler in the Chicago for one-half her power, 4,500 indicated horsepower. Subsequent to the award of the contract the department approved the request of the contractors for the construction of gunboat No. 10 and for gunboat No. 15, to supply this type of boiler instead of the cylindrical one of the original design.

The fitting of this boiler in the two classes of gunboats will furnish a good opportunity to demonstrate its value as compared with the cylindrical boilers fitted in the other gunboats of the same class.

GERMANY'S MERCHANT MARINE.

U. S. Consul Monaghan, writing the Department of State from Chemnitz, on Germany's merchant marine, says that since 1871 it has greatly developed. The number of ships is less, but the tonnage increased from 982,000 to 1,550,000, or over 58 per cent. The number of sailing vessels decreased from 4,372 in 1871 to 2,622 in 1895, a decrease of 40 per cent. in number, and in tons 239,000, or 26 per cent. The increase in steamships is more noteworthy. In 1871 there were but 147, and in 1895 about 1,013. Their tonnage in 1871 was 82,000, and in 1895 about 893,000. A comparison of these figures with Great Britain shows that England's merchant marine is much



CAPT. HENRY W. STONE,
MASTER OF THE "NORTH LAND."
Photo. by John H. Ryder, Cleveland.
(See Page 7.)

larger than that of Germany, but it shows greater development in the marine power of the latter. The increase in tonnage for 1896 promises to be much larger than for any year since 1871. In the growing capacity to meet any increase in commercial activity, as well as a rapid growth along the lines hitherto held almost exclusively by England, France and Holland, Germany sees much encouragement.

TO FACILITATE CARRIAGE BY WATER.

Plans for the construction of a waterway connecting Lake Michigan with the Grand Calumet river at Hammond, Ind., have been submitted to Maj. Marshall, Corps of Engineers, U. S. A., stationed at Chicago, and a movement has taken definite form to present a bill to

the general assembly, which will meet at Indianapolis in January, which will authorize North township to issue bonds for \$200,000.

The project involves the construction of inland harbor basins in Wolf and George Lakes, for which the last Congress appropriated \$8,000.

If the Indiana legislature takes cognizance of the work the harbors will be completed speedily.

The plans provide for a canal 300 feet wide from Lake Michigan south through Wolf Lake to a point one mile east of Hammond. There is ample room at the lake for large industries and several manufacturing concerns are already negotiating for sites.

THE MONTHLY MEAN FOR DECEMBER.

The following data, covering a period of 25 years, have been compiled from the Weather Bureau records at Cleveland, Ohio. During the month of December, for 25 years, the mean or normal temperature was 32°. The warmest month was that of 1889, with an average of 42°, and the coldest month was that of 1876, with an average of 20°. The highest temperature was 68° on December 31, 1875. The lowest temperature was 12° on December 27, 1872.

PRECIPITATION (rain and melted snow).—Average for the month, 2.70 inches. Average number of days with .01 of an inch or more, 17. The greatest monthly precipitation was 5.50 inches in 1873. The least monthly precipitation was 0.84 inches in 1871. The greatest amount of precipitation recorded in any 24 consecutive hours, was 1.87 inches on December 12, 1873. The greatest amount of snowfall recorded in any 24 consecutive hours (record extending to winter of 1884-5 only) was 6.6 inches on December 3, 1893.

Average number of clear days, 3; partly cloudy days, 9; cloudy days, 19. The prevailing winds have been from the southwest. The highest velocity of the wind was 45 miles from the west on December 11, 1878, and on December 12, 1894.

THE SHREWDNESS OF SHREWD MEN.

The consolidated New York and New Jersey Pilots' Association of the port of New York, in order to increase the efficiency of their service, have recently given orders for a new steel, steam pilot boat which was designed by the eminent naval architect, A. Cary Smith, and which is not only to embody all the most modern improvements known to the art of the marine architect, but all the material entering into her construction is to be of specified chemical purity, free from phosphorus or sulphur, and is to be tested physically by samples cut from the plates, angles or shapes, before the material is used. The specifications require each strake of plates to be of stated weight per square foot; each plate will therefore have to be weighed in order to prove that the plates have not been scantied in thickness by being rolled lighter than the specifications call for; which not only insures a vessel of standard weight, but one of assured strength as well. The vessel is to be built and the material is to be tested in accordance with the rules of the American Shipmasters' Association, as published in the Record of American and Foreign Shipping. The vessel will be required to class *A1 for twenty years in that association.

We are pleased to note that the article on "Triple Screw Vessels," published on page 7 in our issue of November 26th as the opinion of Prof. Carl Basley, of the German navy, was an editorial translation from the original for publication in the Journal of the American Society of Naval Engineers, the original paper of course, being contributed in the German.

NEWS AROUND THE LAKES.

BUFFALO, N. Y.

Special Correspondence to The Marine Record.

Capt. George, John and Eugene Breyman and Capt. William Rooney were in Buffalo this week to bid on pier and dredge work amounting to a million and three-quarters of dollars. The figures favored Hughes Bros. & Bangs, who built the "Soo" locks.

It is a common thing for captains to get together and kick about their tug bills. "What do you think I had to pay in and out of Green Bay?" inquired one of them of some more kickers in Hand's tug office to-day. "Sixty six dollars, when I thought \$30 would be about right."

There seems to be an unusual amount of loading all sorts of cargoes to hold this winter. The fleet began to load grain on that basis first and now most of the coal cargoes are taken in that way. The canal fleet was largely loaded in that way on the last trip, not only for New York but for way ports.

There is still plenty of business here, though it is now showing signs of an early decline. This port took in close to 4,000,000 bushels of grain last week, and will do a good business in that line all this week, which ought to see most of the fleet laid up. There was a good spurt in lumber last week, the receipts being about 8,250,000 feet.

The steamers Pearl and Gazelle, of the Buffalo Crystal Beach Line, which were libeled some time ago, were sold at auction by the United States marshal on Saturday. The Buffalo, Rochester & Pittsburgh Coal & Iron Co. libeled the boats for coal bills, and this sale was the outcome of it. Henry A. Menker bought the Pearl for \$1,050 and Hugh V. Schaubert bought the Gazelle.

Work on the canal improvement contract was begun by the Buffalo Dredging Co. last week, which ought to be an assurance that the canal will be deepened as soon as possible, at least if other contractors are as prompt as these are. There was great need of the work at this end of the canal, on account of the shallowness of the water and the immense amount of rock at the bottom. Boats were always striking there and damaging their cargoes.

Capt. McDowell, of the Kearsarge, is not going to give it up just on account of the accident he had coming down, but will go back after his 28th load at Duluth all the same. He says that the stories of the railroads being blocked with snow in the Northwest, don't scare him. He will rig up the boat and run her down on skates if Mud Lake closes up against him.

Somehow the barge C. L. Young does not get out of her perch on the rocks at the head of the Niagara. The steamer George King and a tug have been trying to pull her off, but they did not succeed and she may winter there. Tugmen say that the thing to do is to get out half a dozen tugs. They would get her, or at least a piece of her. But the captain seems to think that a piece of her afloat is worth less than the whole of her ashore.

There has been considerable difficulty from low water here of late, and some of the captains have gone off with a ruffled temper because somebody else's boat was on the bottom ahead of him. An expedition went up the Blackwell canal the other day, headed by the harbor master, to pull off some of the Davidson fleet to let the Berlin and the Elphicke pass, but the up-current had been there ahead of them and the boats were afloat when they arrived.

This is getting to be a hard section for lumber vessels. Not long ago I made up a list of them in trouble hereabouts, and the end is not yet. The steamer Bradley spent more than a day in the draw of the Ohio basin slip bridge last week, and the Viking was on Strawberry Island in Niagara River yesterday. The government operations at Strawberry have been mostly to blame for the many groundings there. It was often impossible to pass the dredge with a tow without going on at the head of the island.

There is much sympathy for Hingston & Woods, the well known dredgers, on account of their misfortune in the new waterworks tunnel excavation. They went on the bond of Contractor Douglass and when he failed to do the work they took it in hand. There has been nothing but disaster from the start. The tunnel would fill up with water and stop the work. Now, after a long time taken to build a bulkhead the first blast knocked every thing to pieces and it is said that it will take six months to finish the work.

No package-freight lines are yet laying up all the boats that come in but the Anchor and Union Transit. All of the latter line are in now but the Moran, and she will be here soon. There has been such a rush of this class of freight in the past month that every boat has been kept running, and there has been any amount of chartering outside boats. In fact the managers have been watching each other, and when it was found that some of them were chartering "wild" tonnage, the others followed, in order to keep up their carrying percentage for the season. It looks as though there would be a demand for boats with gangways for next season, especially if the line association continues.

These are days when there is a careful counting up of the time a boat makes. There is a story that one of the big line managers has an original way of handling his captains when they come in badly behind time. When they report to him he mildly stares at them and says something like this: "Well, I don't remember you,

sir. You will have to tell me who you are." Then after the captain has looked in vain for a hole to crawl into the manager tells him that he thinks he does remember a man looking something like him who took out one of the line boats some time ago, but it was so long that he had forgotten about it. The boat comes in next trip ahead of time. These are the times, too, when the captain is reckoning how he is going to lay up a 200-foot boat in a 150 foot space. There is prospect of a number of liners here this winter, and there will be a large fleet of grain-laden boats, but after that the tonnage will be mainly lumber vessels that are not able to find a reason for getting away. There is considerable lumber to come down yet. The Curtis, Sam Marshall and Germania tows, with something like 8,000,000 feet, are bound this way. JOHN CHAMBERLIN.

CHICAGO, ILL.

Special Correspondence to The Marine Record.

The schooner Rising Star was sold at Marshall's sale, Monday, for \$165, to George B. Carpenter & Co., ship chandlers.

The steamer Gleim, Capt. F. W. Swails, of the Williams Line, of South Haven, has gone into winter quarters at that port.

The Goodrich Transportation Co.'s steamer Atlanta, Capt. William Nicholson, has had a very successful and prosperous season.

The Northern Michigan Line steamer City of Charlevoix, Capt. Wm. Finucan, left this week for northern Michigan ports on her last trip this season.

At Miller Bros.' shipyard the steamer Emma E. Thompson was in dock for a new rudder stock and a new shoe; the steamer Jay Gould is in for re-calking and re-ironing.

On Tuesday, shippers were offering 2 cents and vesselmen asking 2 1/4 cents on corn to Lake Erie ports. There was a fair inquiry, and several charters would be made if the rate could be agreed upon.

Graham & Morton have chartered the L. M. & L. S. Trans. Co.'s steamer Jay Gould, to run in connection with the steamer City of Duluth, during the winter, across Lake Michigan to St. Joseph.

The following schooners have gone into winter quarters: Cora A. Lotus, York State, Gracie M. Tyler, E. R. Blake, George Marsh, Cape Horn, George Steel, A. Mosher, C. H. Hackley and W. O. Goodman.

The schooner Mary E. Cook arrived here Sunday with lumber. She was in a partly disabled condition, having carried away her jib-boom and head-gear against a dock at Manitowoc, where she had run into for shelter on her way up.

Capt. R. C. Smith has been appointed master of the steamer A. G. Van Raalte, by her owners, Ross, Macrae & Ross, contractors for the 68th street tunnel, which the steamer will have to run to with material and supplies during the winter months.

Nearly all the schooners comprising the lumber fleet at this port, have been stripped and placed in winter quarters. A few schooners are yet out on Lake Michigan, and hopes are entertained that all will arrive safely, as the weather, although very cold, is not tempestuous.

The schooner Libbie Nau, Capt. Oliver Nicholson, of this port, bound here with lumber from Marinette, ran on Green Island at 3 o'clock, Sunday morning. One of Leatham & Smith's tugs, from Sturgeon Bay, went to her assistance and released her on Sunday forenoon, and she left for this port.

Capt. E. S. Hellesey, of the schooner Ivor Lawson, wishes through the columns of THE MARINE RECORD, to thank the captain and crew of the life saving station at Whitehall, Mich., for their kind assistance rendered in enabling him to find and get on board the schooner, the big anchor and chain which he lost on his last trip.

The steamer J. L. Hurd arrived here Tuesday at noon in tow of the wrecking-tug A. P. Wright. The Hurd lost her rudder when leaving Menominee Saturday morning with lumber for this port. Leatham & Smith, tug owners, Sturgeon Bay, have made a precedent by having the Wright tow the Hurd alone up to Sampson's slip, at 22nd street, where she is to unload.

The steamer City of Rome arrived from Buffalo, Monday, with coal, and drawing 15 feet 6 inches of water. When going up the south branch in tow she struck on the Washington street tunnel, and remained on about 22 hours. The water was very low in the river, in consequence of the west and southwest winds, which had been prevailing for several days.

James Lendabarker, one of the oldest and best-known engineers on the lakes, and residing here for forty years, died this week at the residence of his son, Eudion Lendabarker, 193 Sheffield avenue. Mr. Lendabarker had hardly been sick a day in his life until about a year ago, when he became a sufferer from both asthma and heart trouble. He was then 67 years of age and failed rapidly. His death came easily and was not unexpected. He was a skillful engineer, and had traveled all over the world in the pursuit of his calling. Since 1850 he had been most of the time on the lakes, sailing as chief engineer.

Capt. James Donegan, William McLaughlin and John W. Gorey intend to start a club and gymnasium under the name or title of "The Marine and South Water Street Gymnasium," at 252 South Water St., on the two floors formerly occupied by John G. Jetson & Co. The first entertainment will take place on Thursday evening, when exhibition of wrestling, boxing, club swing-

ing, bag punching and other gymnastics will be the order of the evening, and will be combined thereafter, together with billiards and pool. The spacious rooms will be finished and furnished for the convenience and comfort of patrons. Marine men are invited to attend and become members of the club. WILLIAMS.

CLEVELAND O.

Special Correspondence to The Marine Record.

The Wilson Liner Sitka is in the Ship Owners' dry-dock for a new stern post.

The steamer Choctaw docked in the Ship Owners' dry-dock for repairs to her bottom.

The passenger steamer State of Ohio, of the C. & B. Line, has gone into winter quarters.

The barge Whitworth docked in the Cleveland dry-dock for several new plates and frames.

We had the pleasure of a call this week from Capt. W. H. Singer, the enterprising tug owner of Duluth.

The nineteenth annual ball given by the original tugmen, was held on Tuesday evening at Lang's hall, on Lorain street.

The Mutual Line steamer Corsica is receiving bottom repairs at the Cleveland Dry-dock. Several plates have been taken off.

Capt. James Davidson, of Bay City; Capt. George McLeod, of Buffalo; J. J. Rardon and Capt. Cy Sinclair, of Chicago, were in the city on Tuesday.

Capt. John C. Brown, master of the steamer Margaret Olwill, was presented a few days ago with a gold watch and chain by the members of the crew.

THE RECORD was favored with a pleasant visit this week from Lieut. G. H. Stafford, U. S. N., in charge of the branch Hydrographic office at this port.

The City of Cleveland, Capt. McLachlan, of the D. & C. Line, left here on her last trip of the season Tuesday night. The City of Detroit will continue to run alternate nights until prevented by ice.

Supt. Chapman and Inspector Landry of the life-saving service, inspected the station on Wednesday. The keeper, Capt. Motley, has not yet received official notice when the station is to be closed.

Repairs on the steamer Roumania have been completed at the Ship Owners' Dry-dock. The work consisted of changing her hatches to twenty-four-foot centers, entire new upper decks and hatch coamings.

Navigation practically closed November 1, when insurance rates expired on all but A1 tonnage. There is still a respectable port list of arrivals and clearances at the principal ports, and there is a considerable number of vessels still using Detroit River.

Harvey D. Goulder, Esq., general counsel for the Lake Carriers' Association, has left for Washington to watch the action taken on the Detroit River bridge bill. It is stated that the bill may pass the Senate, but a united effort will be made to defeat it in the House.

The Wallula was floated out of dry-dock on Tuesday, after being patched up. The survey work on her bottom and deck has been completed, and Capt. Davidson and Benham expect to get through with the work Wednesday, but it may be several days before the figures are made up.

This port is fast filling up with vessels going into winter quarters, especially those of small capacity and on their second letter. The major portion of the high-classed tonnage are yet plugging a few dollars out of the season, and I suppose they will do so up to the 10th, unless stopped by ice before that date.

Mr. James Corrigan, who last week closed a contract with the Chicago Ship Building Co. for a large steel schooner, has placed an order with the Globe Iron Works Co., for a vessel of the same construction, to come out at the opening of navigation next spring. Her dimensions are to be 388 feet over all, 376 feet keel, 46 feet beam, and 26 feet deep.

The riveters and boilermakers intend putting a new scale of wages on the market January 15. The new scale will have no effect on the winter scale which was signed by the local unions and shipbuilding companies and applies exclusively to the vessels now on the stocks. Officers of the boilermakers' and iron shipbuilders' unions feel sanguine their new scale will be adopted without any friction.

Grave fears for the safety of the steamer Cumberland Capt. White were entertained this week, but to the great relief of those interested, she turned up all well, after experiencing the hardest gales of the season on Lake Superior, and finally taking shelter in Portage Lake canal. The John N. Glidden and her consort the Aberdeen were also overdue, but arrived all well at Milwaukee after a five days' trip from Mackinac.

The matter of bridge hours at this port has been talked about more or less this week, but the season is so near a close that nothing will be done until the spring. It is of course annoying for vessels to be delayed, and it is equally so for a large shore traffic to be hung up while bridges are swinging. Still there ought to be an easy way of obviating all friction, and proper hours chosen so as to better facilitate all traffic.

Surveyors on the steamer Wallula can't get together, and a third party as umpire has been appointed. Capt. Davidson, of Bay City, for the underwriters; Capt. Benham, for the owners; and Capt. Thos. Murphy as arbitrator, would be a hard trio to beat in the case of a wooden hull as this is. Capt. Dan. McLeod done well by keeping out of the affair altogether. However, the Wilson Transit Line, owners of the steamer, are fair, honorable people, and want not a cent more than their

rights, in any case, this they no doubt expect and will maintain, so that in a few days, when all interests get together, the entire loss will no doubt be amicably settled.

These general passenger and ticket agents are always up to, if not a trifle ahead of the times. Now we find Mr. Herman, general passenger agent of the C. & B. Line, not satisfied with the ordinary circular announcing withdrawal of service for the season, but he has sent out a very neat, glossy card with half-tone cut of the City of Buffalo breaking her way through heavy ice with the title, "Laid up for the Winter." This announced the last trip from Cleveland Nov. 28, and from Buffalo Nov. 30. NAUTILUS.

FLOTSAM, JETSAM AND LAGAN.

The Milwaukee life-saving station will be closed December 10.

The steamer Edwards and the schooner Golden Age will be rebuilt during the winter.

The life-saving crew at Muskegon has been ordered out of service December 5.

It has been decided to have the Philetus Sawyer rebuilt at Green Bay this winter.

The work of the dredges on the straight channel at Toledo has been suspended for the season.

Life-saving crews on the east shore of Lake Michigan will go out of commission on December 5 this season.

The engine of the steamer Continental is to be compounded by the Frontier Iron Works at Detroit during the winter.

John Craig, watchman on the steamer S. E. Sheldon, was caught between the steamer and a dock at Duluth and badly bruised.

On the last run down from Milwaukee to Buffalo the steamer Thomas Davidson and consort Baltic covered the distance in 95 hours.

The old passenger steamer Chief Justice Waite sold under the hammer of the United States marshal at Chicago recently for \$810.

The schooner J. I. Case has just completed extensive repairs at Toledo. She has new deck, new hatches and new winches for loading timber.

The Bessemer Line steamer Siemens is given the cargo record last week from Lake Superior by carrying 177,000 bushels of wheat, equal to 5,370 tons.

The George E. Hartnell carried the largest cargo of coal into Milwaukee on her last trip that ever was received at that port, viz., 4,776 net tons of anthracite.

Drake & Wallace have purchased the machinery of the steamer Calumet, formerly running on the Calumet River, and are laying the keel for an 80-foot steamer to ply on the St. Joseph's River.

Thomas O'Hara, a watchman on the steamer Selwyn Eddy, was dragged overboard last Saturday by the weight of a fender he was handling at Two Harbors and was drowned. He was 21 years old and lived in Detroit.

Mr. Mose Bowe, the well-known ship carpenter of Toledo, has gone to Marine City to become foreman for Mr. Alex Anderson, who has the contract for building two large scows for Geo. H. Breyman & Bros., of Toledo.

Reiboldt, Wolter & Co., Sturgeon Bay, Wis., have closed a contract to rebuild the schooner Jose during the winter. The Jose is owned in Racine. The shipyard firm expect to close several other contracts at an early date.

THE INFANT SUNDAY SCHOOL.—Young Lady Teacher: "The idol had eyes, but it couldn't—" Chorus: "See." "It had ears, but it couldn't—" "Hear." "It had lips, but it couldn't—" "Speak." "It had a nose, but it couldn't—" "Wipe it."

The signal service denoting changes of wind, storms, etc., has been closed for 1896 on Lake Superior, and will close on December 10 on Lakes Huron and Michigan. On the lower lakes, Erie and Ontario, it will operate five days longer.

Shipments from Duluth and Superior for the season up to December 1 are: Wheat, 47,095,734 bushels; corn, 453,182 bushels; oats, 4,328,223 bushels; rye, 1,215,459 bushels; barley, 6,560,511 bushels; flax, 5,580,797 bushels; ore, 3,345,227 tons; lumber, 206,574,582 feet.

The steamer City of Berlin ran into the water main in the river at Manitowoc this week and broke it in two. A new main will be laid immediately, and will be put deep enough to prevent any further obstruction to navigation. If only something like this could be done with those street railroad tunnels in Chicago River it would be a God send to vessel masters and owners.

Jerry Gorman and Frank Richardson, sailors on the steamer Inter-Ocean, were arrested at Escanaba Friday

and sentenced to 90 days in jail for assault with intent to kill. The assault was made upon Capt. Wex, of the Inter-Ocean. After beating him for discharging them, they attempted to throw him into the bay. His cries brought help to his rescue.

David D. Spaulding formerly a member of the Thunder Bay life-saving station and later assistant keeper of Spectacle Reef light, lost his life after leaving Cheboygan for the light. His wife had a presentiment that her husband would meet his death by drowning, which was his main reason for severing his connection with the life-saving service. He was a member of Granite Tent, K. O. T. M., and held a life insurance policy in that order.

The large steel steamer Crescent City, now under construction at the yards of the Chicago Ship Building Co., will be equipped with a quadruple expansion engine and Babcock & Wilcox boilers guaranteed 250 pounds steam pressure. The cylinders of the engine are to be 19, 28, 41 and 60 inches in diameter and the stroke 42 inches. The engine is to be built at the Ship Building Co.'s works and will be the first introduced on the lakes on a cargo steamer of large size.

A short time ago an old lady went on board Nelson's flagship, the Victory. The different objects of interest were duly shown to her, and on reaching the spot where the great naval hero was wounded (which is marked by a raised brass plate), the officer remarked to her:

"Here Nelson fell!"

"And no wonder!" exclaimed the old lady. "I nearly fell there myself."—London Answers.

While working at the shore end of the old south harbor pier, at Sheboygan, the dredge encountered the hull of a submerged vessel. Some claim that the wreck is that of a small schooner named the Niagara, which stranded and was buried in the sand many years ago. The growth of the lake shore is well shown by the position of the old hull. It was buried underneath many feet of soil and at least 50 feet from what is now the water's edge. The wreck of the Baltimore was encountered a short time ago and the prow is now lying on the beach.

A report comes from Sturgeon Bay, Wis., that the Australasia wreck still holds out first-rate, and is not so very badly used up. Considerable of her cargo washed ashore and has been picked up by people in the vicinity. The wrecking company had writs served on these people by the sheriff last week to prevent their using the fuel and compelling them to have the same delivered at the piers at Jacksonport. The beach was covered with the coal previous to the recent storms and piles several feet deep were nothing unusual in close proximity to the wreck, but the recent southwest gale has caused the sand to cover the coal and bury it out of sight.

TO IMPROVE CHICAGO RIVER

The Chicago River and Harbor Improvement Association has authorized Gen. T. J. Henderson, who represented the Association at Washington last year, to confer with the Secretary of War and ascertain how the appropriation of \$700,000 is to be expended in improving the river. If the secretary rules that the money must all be spent in dredging, General Henderson is to try to secure an amendment to the law allowing the money to be used for widening and straightening, as well as deepening the stream.

THE twenty-ninth annual volume of the Record of American and Foreign Shipping for 1897, will be ready for delivery to subscribers about December 21, 1896. This volume will contain reports and particulars of about eighteen thousand vessels engaged in the American, inland and foreign trade. Rules for the construction of iron, steel and wooden vessels. Rules for the construction of steam machinery for vessels. Rules for the installation of electric lighting and power apparatus on ship-board. A list of representatives of marine underwriters throughout the world, and other valuable information of special importance to underwriters and all firms or individuals interested in shipping. Supplements to this work will be issued semi-monthly. The Record is a standard American classification of shipping, published by the American Shipmasters' Association, No. 37 William street, New York, to whom application for subscription may be made.

LARGE STEEL CASTINGS.

The Penn Steel Casting and Machine Co., of Chester, Pa., seems now to be taking the lead in making large steel castings for vessels. Saturday last a run of metal weighing over 70,000 pounds was successfully cast, forming a ram stern post for the battleship Kearsage now under construction at the yards of the Newport News Ship Building and Dry-Dock Co. The casting is considered by experts as one of the finest that has ever been produced from open-hearth steel. The same company has also a long list of orders for work to go into the battleships, gunboats, torpedo-boats, etc., now building.

LAKE LEVELS.

The effect of the Chicago drainage canal on the level of the lakes is still a matter of dispute between New York and Chicago dailies. The eastern papers express anew the fear that the steady abstraction from Lake Michigan of 300,000 cubic feet of water per minute through the drainage canal will lower the lake level so as to render useless many costly harbor improvements, and make many stretches of waterway unnavigable. The Chicago folks suggest that if such serious consequences follow, they may be remedied by building a dam across Niagara River to maintain a higher level on Lake Erie, and another at the head of St. Clair River to raise the levels of Lakes Huron and Michigan. It is pointed out, however, that the difference in the level of Lake Huron and Lake Erie is 13 feet, and that a dam at the Niagara River high enough to make slack water all the way would submerge considerable portions of nearly all the lake cities, together with millions of acres along the shores. And Canada would have as much to say about such a damming project as the United States. Of course all this has been said, written and talked about for the past several years. The Pioneer Press says that probably nothing can be done in the matter by our government until the drainage canal is completed and its effect on the lake level is observed. Then, if it is found that the evil consequences predicted are actually coming to pass, and that a great continental waterway is about being ruined by the ambitious project of Chicago, the government will promptly close the canal, and the Windy City will have to devise some means less expensive to the continent at large for flushing its sewers. Chicago itself has a larger interest than any other city in the maintenance of the lake waterway unimpaired—an interest which would be protected by its people at whatever cost. But it is to be hoped that these theorists may prove to be in the right who claim the subaqueous sources from which Lake Michigan is alleged to draw its principal supplies will be called into greater activity by the demands of the drainage canal so that no injurious lowering of the surface can take place. If this theory proves correct Chicago will rejoice in a magnificent triumph of sanitary engineering, and its editors will remind their "provincial" New York contemporaries that they need some schooling in modern science.

Meanwhile, however, what is regarded as "sanitary engineering" for Chicago, is looked upon as a piece of decidedly unsanitary engineering for St. Louis, which gets its water supply from the Mississippi through a gigantic system of settling basins, aqueducts and reservoirs. St. Louis scientists declare that the dilution of the sewerage coming through the canal into the Illinois and hence into the Mississippi river, and the sedimentation taking place on the long journey from Chicago are not sufficient to purify or render it innocuous, especially in times of low water; and they are urging measures to compel some other disposition of the poisonous current. The cause of St. Louis is the cause of other cities on the Mississippi, so an interesting fight is ahead, whatever the result of the canal upon the lake level.

For grain receipts at Buffalo the season will undoubtedly go down on record as the banner one, as they now exceed any previous receipts by over 22,000,000 bushels. The total receipts of grain from the opening of navigation to December 1 were 154,338,921 bushels, against 132,808,238 bushels in 1893—which year held the former record. Of flour, 9,245,790 barrels were received thus far this season, which exceeds last year's receipts by 1,345,340 barrels, but are over 1,000,000 barrels less than in 1893 and in 1894. The total receipts of grain, flour included as grain, amount to 200,567,871 bushels, exceeding the receipts of 1893 (highest previous record) by 14,479,193 bushels.

ANNUAL REPORT OF THE NAVAL
HYDROGRAPHER.

Commander Sigsbee, U. S. N. Hydrographer, has just issued his annual report from which we take some brief extracts as follows:

"The work of constructing nautical charts has advanced to such a state that I am able to report: That the set of general ocean charts is complete. The charts of the western hemisphere are practically complete and four-fifths of the special coast charts and harbor and special charts of the western hemisphere, outside of the Polar regions are available for issue, also that the work has been extended into the eastern hemisphere where the general coast charts of China and Japan are practically complete, and where work is in progress in reference to the general coast charts of southern and eastern Africa. The organization of the division of chart construction is such that larger appropriations of money could be effectively used in advancing more rapidly to new ground. An increase of \$130,000 a year for five years would enable the office to complete its set of charts, after which the expense of supplying the government and the maritime community with the latest editions would be comparatively slight."

The engraved chart of the southern entrance to Detroit River, resulting from the survey carried on during the summer of 1894 by the officers of the U. S. S. Michigan, under the direction of Lieut. Comdr. R. M. Berry, U. S. N., has been published together with charts of the approaches to Cleveland, Ohio, and Pelee Passage, Can., which were made during the summer of 1895, by the officers of the U. S. S. Michigan, under the command of Lieut. Comdr. B. S. Richards, U. S. N.

A detailed hydrographic survey of the water area lying south of the boundary line between the United States and Canada, and north of latitude $41^{\circ} 31'$, between the meridians $82^{\circ} 41'$ and $82^{\circ} 53'$ west of Greenwich, having been ordered by the bureau, the necessary projections and instructions were drawn up by the opening of navigation this spring, and since that time this survey has been carried on by the officers of the U. S. S. Michigan, under the command of Lieut. Comdr. Eugene H. C. Leutze, U. S. N.

The receipt of observations from the Great Lakes shows a decided increase in the number of observers in those waters. These reports are being used for the preparation of papers on meteorological subjects adapted to the use of navigators cruising on the lakes.

The statistics of the branch offices show the great amount of helpful work done by those establishments. Through the operations of the branch offices at Chicago and Cleveland, a knowledge of the publications and operations of the Hydrographic Office is being rapidly spread throughout the Great Lakes' region. It is believed that only the unfavorable condition of the public treasury has prevented Congress from increasing the number of branch offices along the Great Lakes.

From the branch offices the main office receives many suggestions relating to commercial and mercantile needs, which enables the office to give a useful direction to its publications and work.

NEW MARINE PATENTS.

No. 571,741. Stuffing Box for Propeller-Shafts. James J. Bates, St. Louis, Mo.

Claim.—The combination with a propeller-shaft, of a sleeve surrounding the same, packing, and packing-glands at each end of the sleeve, rods which engage the outside or rearmost packing-gland said rods extending to the interior of the hull, and means for tightening rods so that the gland compresses the rearmost packing; the rearmost packing-gland being located outside of the hull of the vessel, and means located inside the hull of the vessel, and connected to outside gland for tightening said gland; having inwardly-extending flanges near each end thereof, a collar arranged at the rear end of the sleeve and abutting against the rearmost of said flanges, a key co-operating with collar and sleeve, a packing gland, packing interposed between gland and collar, and means located in the hull of the vessel and attached to said gland for tightening the same.

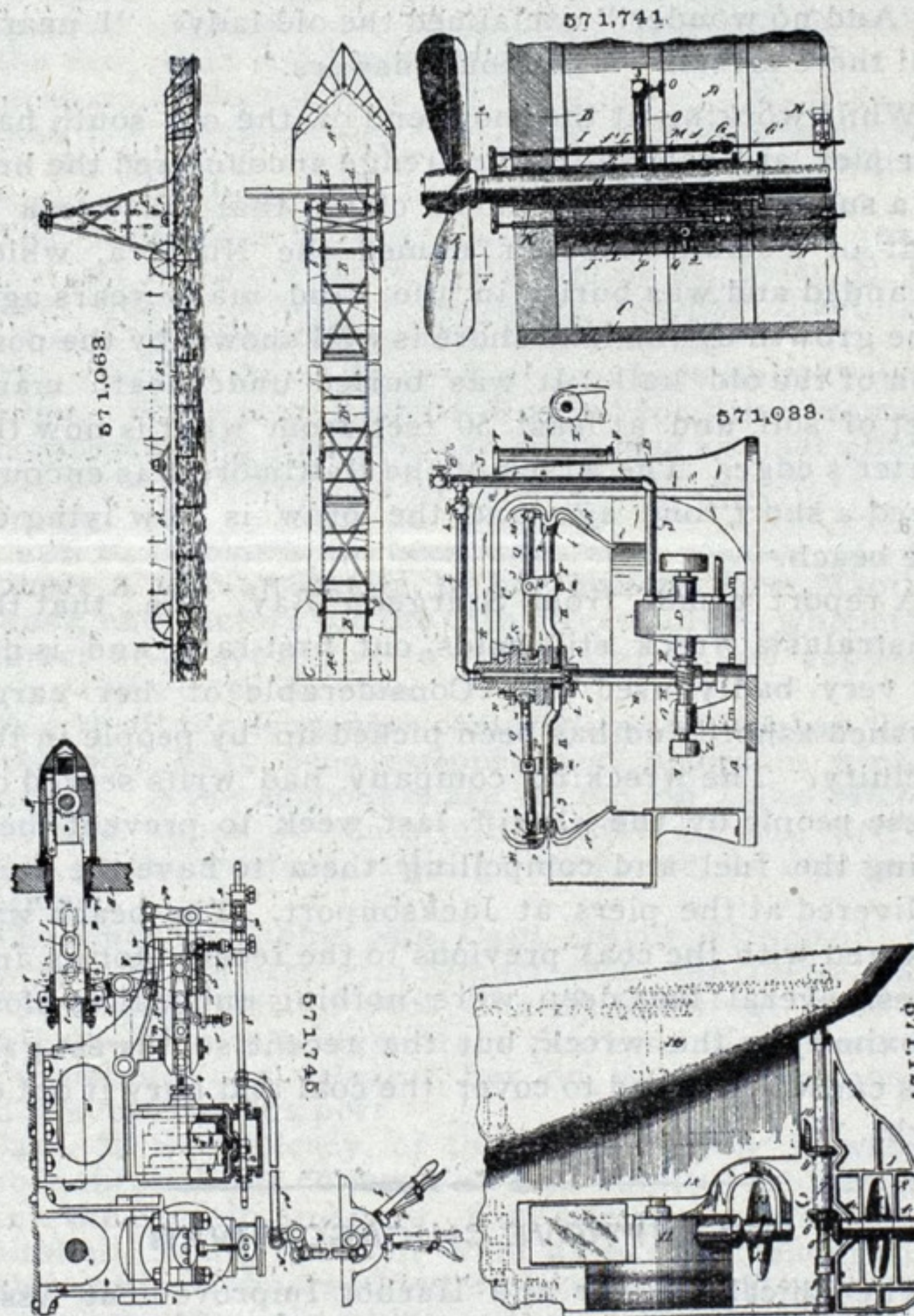
No. 571,038. Net-Lifting Machine. William F. Ahrens, Two Rivers, Wis., assignor of one-half to Peter Gagnon, same place.

Claim.—A net-lifting machine comprising a rotative shaft, arms radiating from the shaft, net-guards car-

ried by the arms, and reciprocative net-gripping plungers operative in conjunction with the guards; net-guards carried by the arms, levers fulcrumed on said arms, plungers that being connected to the levers operate in conjunction with the net-guards, and suitable means for automatically rocking said levers at predetermined intervals. Plungers that being connected to the levers operate in conjunction with the net-guards, and fixed cams arranged to cause a rock of said levers at predetermined intervals; plungers that being connected to the levers extend through the guards into the grooves of the same, and suitable means for rocking said levers at predetermined intervals.

No. 571,127. Propulsion of Vessels. John H. Mosley, St. Louis, Mo.

Claim.—In a vessel, the combination of a screw-propeller mounted on the rudder and steering mechanism therefor, of twin-screw propellers mounted on a pivotal framework, and connecting devices whereby said pivotal framework is controlled by the steering mechanism and a casing inclosing said connecting devices and comprising said framework as a part thereof, for the purpose set forth. In a vessel, the combination of a vertical shaft having a loose collar thereon provided with two bevel-gears, a bevel-gear on the engine-shaft meshing with one of said gears and a pivotally-mounted framework having one or more horizontal shafts journaled thereon and each carrying a screw-propeller and being connected to and driven by said vertical shaft, and a



casing inclosing such connecting mechanism and consisting of two horizontal sections, one of said sections being fixed and the section being fastened to a vertical shaft and comprising the pivotal framework above mentioned.

No. 571,063. Claim.—In a current-motor, the combination with the motor-chains, of paddles provided with floats which serve to hold the paddles upright when in the water, substantially as described. Paddles provided with floats having perforations in their tops to discharge the water. Paddles pivoted thereto upon their transverse axes and provided with floats so that the water-current causes the floats of the paddles to point downstream in their initial entrance therein and also as they are withdrawn therefrom, and be withdrawn with a reverse half-revolution.

No. 571,745. Means for Adjusting Blades of Screw Propellers. Heinrich Brinkmann, Munich, Germany. Patented in Germany, England, France, Italy and in Spain.

Claim.—The combination, with a propeller adjusting device and a cylinder provided with inlet and outlet ports, of a piston within the cylinder and connected to the propeller-adjusting device, a valve arranged to close both inlet ports at once when in its central position, a hand lever for operating said valve, and mechanism au-

tomatically operated by the propeller-adjusting device for returning the valve to its intermediate position. The combination, with a propeller-adjusting device and means for operating the same, of mechanism independent of the operating means connected to said means and tending to force it in the direction it was last thrown.

NOTICE TO MARINERS.

LAKE ERIE GAS BUOYS REMOVED FOR WINTER.

The gas buoy marking South-East Shoal, of Pelee Spit, Lake Erie, has been removed to winter quarters. Its place is marked by a wooden spar buoy.

The gas buoy on the Middle Ground, in the same vicinity, has also been removed to winter quarters, and its place is marked by a spar buoy.

SHOALS IN THE NORTH CHANNEL OF LAKE HURON.

The following rocks have been accurately located by Mr. W. J. Stewart, of the Canadian Hydrographic Survey.

1. ROCKS IN THE WESTERN APPROACH OF ALGOMA MILL.—A small rock with 8 feet of water on it lies S. by W. $\frac{1}{4}$ W., $2\frac{3}{4}$ cables from Simon Rock. It is shown on Admiralty Chart No. 908 as the northern of the two Southwest Patches and as having 18 feet on it.

2. ROCKS IN WHALESBACK CHANNEL.—A small rock with 9 feet of water on it lies W. S. W. 750 feet from the west end of Parson's Island.

Another rock, awash, lies W. $\frac{1}{4}$ S. 825 feet from the west end of the western Mulock Island.

Another rock, awash, lies East 150 feet from the dry rocks off the S. E. end of Edgar Island.

3. ROCK IN AIRD BAY.—A small rock with 8 feet on it lies N. W. by W. $\frac{3}{4}$ W. 450 feet from the north end of Lister Island.

These notices affect Admiralty Chart No. 908.

4. ROCK IN THE ENTRANCE TO FRENCH RIVER HARBOR.—A small rock with 11 feet water over it lies 120 feet east of Lefroy Island lighthouse. It is almost in mid channel, and vessels may pass on either side of it.

This notice affects Admiralty Charts Nos. 327 and 1213.

The datum for these depths is the same as that used for the charts. The water now is about three feet lower than it was then.

If possessors of copies of these charts will forward them to the Chief Engineer, Marine and Fisheries Department, these corrections will be inserted free of charge.

II. NEW CHART OF GEORGIAN BAY.

A chart (No. 327) of the whole of Georgian Bay, as surveyed by the Canadian Hydrographic Survey, has just been published by the British Admiralty. This contains (in addition to the work on the coast sheets published from time to time) the work done in 1894 in Nottawasaga Bay, which will not be published separately in sheet form.

F. GOURDEAU,

Deputy Minister of Marine and Fisheries.

Department of Marine and Fisheries,

OTTAWA, CANADA, Nov. 13, 1896.

All bearings, unless otherwise noted, are magnetic and are given from seaward, miles are nautical miles, heights are above high water, and all depths are at mean low water.

Pilots, masters, or others interested are earnestly requested to send information of dangers, changes in aids to navigation, notice of new shoals or channels, errors in publications, or any other facts affecting the navigation of Canadian waters to the Deputy Minister of Marine and Fisheries, Ottawa, Canada.

ELECTRIC LIGHTING CONTRACT.

The F. P. Little Electric Construction & Supply Co., of Buffalo, N. Y., has been awarded the contract for installing the electric light plant in the new steel steamer now building at the yards of the Union Dry Dock Co., of Buffalo, to the order of the Standard Oil Co. The electric light plant will consist of one of the General Electric Co.'s latest type marine generating sets, and will be one of the most complete plants on the lakes and entirely up to the best modern practice in all details.

THE New York Marine Journal added several pages to its regular issue last week in giving a full illustrated account of the new Plant Line steamer La Grand Duchesse, built by the Newport News Ship Building and Dry-Dock Co., Newport News, Va. About 3,000 invitations to visit the new boat at her pier in New York were sent out and a large number accepted the same, while on board a bounteous lunch was served and every courtesy shown the visitors.

CAPT. HENRY W. STONE.

(BIOGRAPHICAL SKETCH.)

Among the most prominent and successful lake shipmasters we are pleased to mention the name of Capt. Henry W. Stone, last season in command of the large steel twin-screw passenger steamer North Land, and whose portrait is shown on the third page of our current issue.

Henry W. Stone was born at Vermillion, O., April 9th, 1847, where he resided until he was sixteen years of age. At that time the family moved to Cleveland and Henry commenced his sailing career by joining the schooner David Wagstaff, owned by the late Capt. Alva Bradley. For three seasons he stuck closely to work on the schooner, and, during the close of navigation attended the public schools, finally finishing what may be termed a liberal education by graduating from the Baldwin University, Berea, O.

Pursuing his chosen profession, we find him before the mast in the new schooner Escanaba, still in the Bradley employ, and the following season promoted to second mate. On his owners building the schooner Fayette Brown he was placed in her as chief officer, where, through strict attention to his duties, perseverance and integrity, he so gained the confidence of his employers that in 1870 he was given command of the New London. Capt. Bradley then built the schooner D. P. Rhodes and placed the, at that time, young man in command of her, where he remained doing successful work each season for seven years, afterwards sailing the Thomas Quayle for five seasons.

At this period Capt. Stone began his experience in steam by joining the Superior, which boat he handled for two seasons, when he was transferred to the E. P. Hale, and from her to the steamer Henry Chisholm, where he remained for two seasons. In 1887 the firm of M. A. Bradley & Co. built the steamer Gladstone and Capt. Stone took command, sailing her for three seasons, thus rounding out a period of twenty-six years in the one employ, and faithfully working his way from before the mast in a 560-ton schooner to master of the latest-built and one of the largest lake steamers afloat at that time.

In this brief biographical sketch it may be noted that up to this time Capt. Stone had handled wooden vessels exclusively, and, as it usually requires a still greater degree of efficiency to navigate iron and steel vessels, we find him in 1890 in command of the large new steel steamer La Salle, built by the Cleveland Ship Building Co. to the order of the Lake Superior Iron Co., one of the best ship-owning firms in Cleveland. We may here remark that several years ago it was generally believed that wind or weather could have no possible effect on the fine, powerful three to four thousand ton iron and steel steamers built on the lakes, hence, they were driven, loaded or light, in all weathers, under all conditions, and at their full speed. For five seasons the La Salle was kept well at the head of the list in point of carrying the largest cargoes, chiefly of iron ore, and in making the best, almost schedule time, from port to port.

Last season, or in 1895, Capt. Stone resigned his command in the Lake Superior Iron Co., to take charge of the North Land, a universally known ship built by the Globe Iron Works Co. for the Northern Steamship Co., and forming with her sister ship, the North West, the two most elevated commands on the lakes. Thus, in thirty years' experience, Capt. Henry W. Stone from crawling through the hawse-pipe of a small schooner has reached the quarter deck, or finds himself holding the best command (for, being later built, the North Land is generally considered slightly superior to her sister ship) on fresh water, or from A, B, on a schooner to master of a twin-screw, steel passenger steamer of 4,244 gross tons.

STEAMER CITY OF KALAMAZOO BURNED.

Fire broke out early Monday morning on board the City of Kalamazoo, of the Williams Transportation Co., while moored in winter quarters at South Haven, Mich. Three persons lost their lives in the casualty. They were Robert Van Ostrand, of South Haven, Joseph Lang, fireman on the United States steamer Michigan, and Miss Rosa Germs (colored), stewardess.

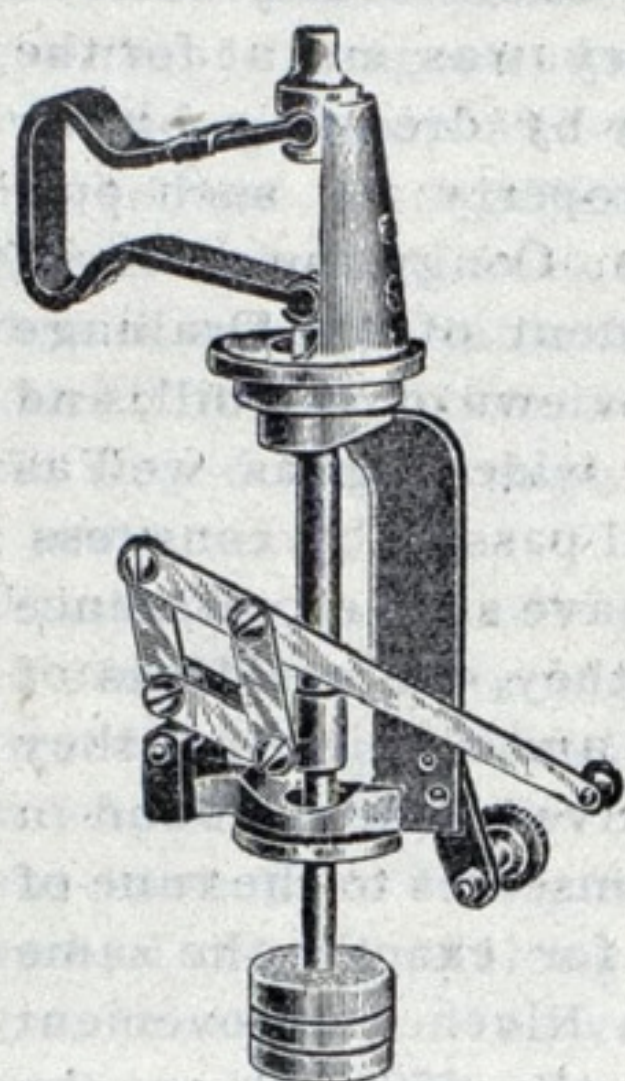
The flames broke out admidships and so rapidly did the fire spread over the steamer's upper works that the escape of six other members of the crew is deemed very

fortunate. Samuel Wellman, fireman, and C. Flanders, chief engineer, were overcome by the smoke, but rallied and broke through a cabin window. All escaped in their night clothes, leaving their wearing apparel and other personal property behind. The stewardess was seen for a minute on the upper deck by the first arrivals at the scene of the fire and then disappeared from sight. Van Ostrand was about 20 years old and was the son of a prominent business man of South Haven. The burned steamer had been plying between Grand Haven, Manistee and Milwaukee since leaving the run between Chicago and South Haven six weeks ago, but went into winter quarters a week ago. She was insured for \$25,000 in a number of eastern companies. The steamer was built at South Haven three years ago and was rated A1. She was elegantly fitted out for the passenger trade and was one of the finest vessels on Lake Michigan. Her regular trade was between South Haven and Chicago.

THE SIMPLEX INDICATOR.

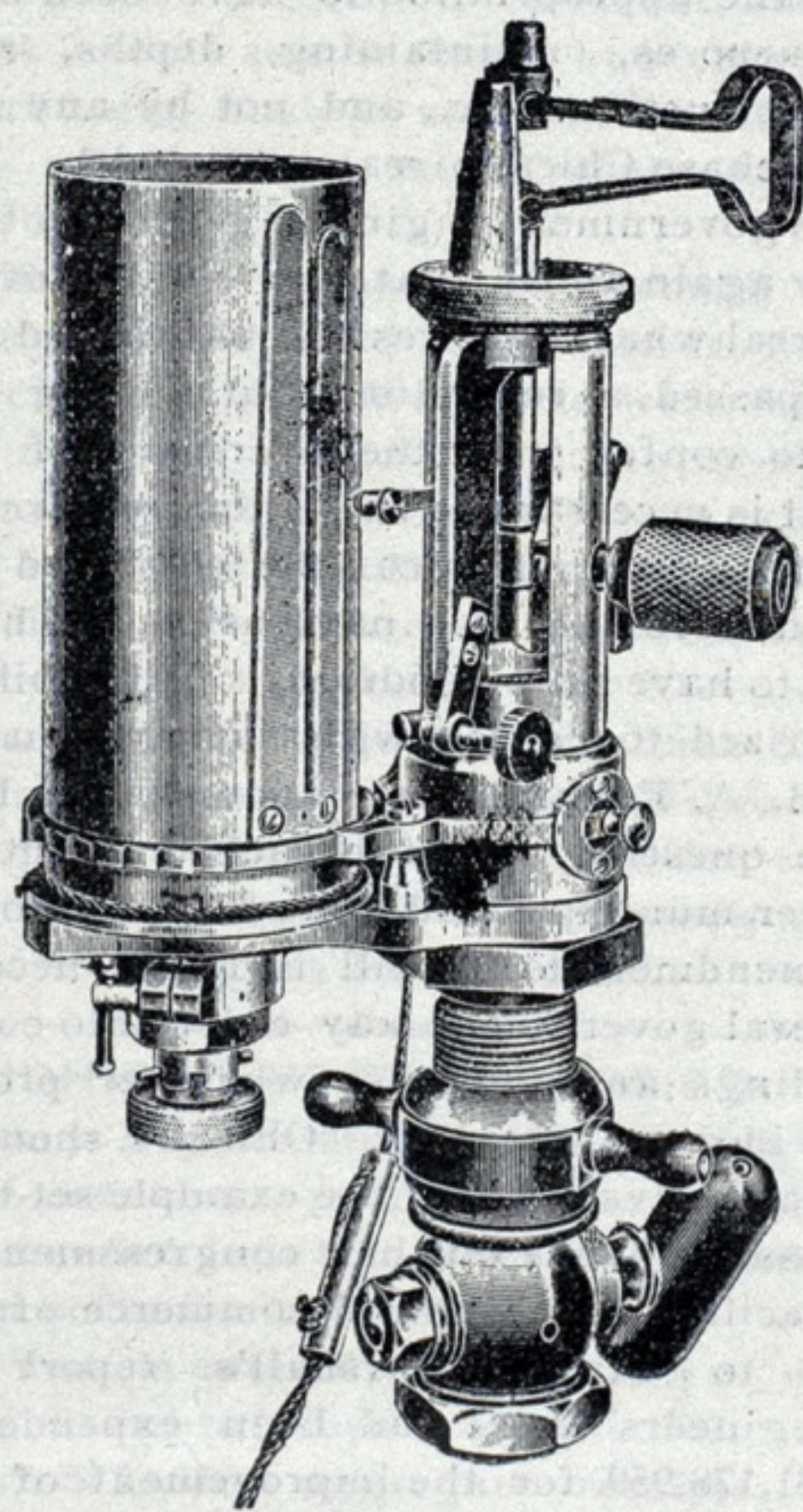
(ILLUSTRATED.)

Our London contemporaries illustrate and describe the Simplex Indicator recently invented and patented by Messrs. Elliott Brothers, London. It is adapted for the



use of either steam, gas or petroleum engines. Great care appears to have been taken in designing the instrument to insure lightness and balance of the moving parts, consistent with strength. The principal feature, it will be observed, is the "tongs" shaped spring, which is carefully hardened, and being used outside the steam cylinder its accuracy is maintained, as it is not subject to extremes of temperature or the corrosive action of saturated steam, and is, therefore, not so liable to

take a set after a period of use. Further, the spring is more easily changed than in any other pattern, and the shape adopted allows of the springs being



made very accurately with great certainty. Other special features are that the control spring from the paper drum is very easily adjusted to varying tensions, the moving parts are very light, a handle is provided by which the indicator can be held while hot, and the whole of the piston, parallel motion and piston rod, can be removed in a moment by simply undoing the milled nut at the top of the instrument, and drawing out the whole part as shown in our illustration. The simplex indicator is made in two sizes, the large size giving diagrams 3 inches in height for use of speeds up to 250 revolutions, and the small size diagrams for 1½ inches in height, for use at speeds from 250 revolutions up to 500 or more. So superior does this indicator appear to us over that of many others now in use, that we would not be surprised to learn of an agency being taken on the lakes at an early date.

MARITIME LAW.

THE ALAMO—LEWIS V. ATCHISON.

Circuit Court of Appeals, Fifth Circuit. June 9, 1896.

I. SALVAGE SERVICES—STRANDING ON CORAL REEF—DEGREE OF DANGER.

A steamer stranded upon one of the Florida coral reefs is always to be considered as in a position of danger, as she is liable to go to pieces on the rocks upon the rising of the wind.

II. SAME—AMOUNT OF COMPENSATION.

Where a large steamer went fast aground on Maryland Shoals (being part of the Florida coral reefs, 15 miles from the port of Key West), in such a position that she could only be taken off into the interior of the reef, and was got off and piloted out of the reef uninjured, after some 24 hours' labor, through the aid of a tug and several sailing vessels under the charge of licensed wreckers, held, that an award of \$15,000, upon a valuation of \$500,000, was not excessive, and would not be reduced on appeal; it appearing that six loads of cargo, admeasuring some 300 tons, were taken out during a wind of from 15 to 18 miles an hour, with considerable danger both to the salving vessels and to the lives of their crews.

Appeal from the District Court of the United States for the Southern District of Florida.

This was a libel in rem by Alfred Atchison against the steamship Alamo and cargo (James F. Lewis, claimant), to recover compensation for salvage services. The District Court awarded the sum of \$15,000 to the salvors, and the claimant has appealed.

DAMAGE CLAIMS.

Judge Severens has just handed down his decision in what has been known as the "Ohio" case. This was the fouling, in 1890, of the steamers Siberia and Mather with the steamer Ohio, which was adjudged to be damaged on the survey as reported by the United States commissioner, \$46,347.11. An imposing array of admiralty lawyers were representing the cases—John C. Shaw, of Detroit, and C. E. Kremer, of Chicago, for the Ohio; H. D. Goulder, Cleveland, and F. H. Canfield, Detroit, representing the Siberia; and J. H. Hoyt, Cleveland, and H. C. Wisner and Alfred Russell, Detroit, representing the Mather. The case was first tried before Judge Hammond, who found all vessels in fault, and decreed two-thirds of the Ohio's damage against the other boats. An important point of law here arose, and the Siberia and Mather excepted to the commissioner's report, as exorbitant, and raised the question whether the owners of the Ohio had the right to recover demurrage, which was included in the commissioner's report.

This was made on the ground that the Ohio's owners by abandonment, had parted with their title and right to the use of the vessel, and they therefore could not recover demurrage, which is profit that they claim they would have made from her use.

Judge Severens, however, overruled all exceptions and confirmed the commissioner's report, excepting that he adds to such report and enlarges the damages recoverable by the Ohio, by allowing interest on all claims since 1890. The total amount thus decreed amounts to in round numbers, \$64,000.

DEMURRAGE CLAIMS.

Judge Coxe, of the United States District Court, in session at Utica, N. Y., has handed down his decision in the case of Capt. John Green, of Buffalo, owner of the steamer Lewiston, versus the Ogdensburg Transportation Co., of Ogdensburg, N. Y. The case was for a claim for demurrage. In the latter part of November, 1894, the Lewiston was chartered through W. M. Egan, of Chicago, with a cargo of corn from Chicago to Ogdensburg at a freight of 4½ cents per bushel. She arrived here on December 4, but the Ogdensburg Transportation Co. claimed that she was to hold the cargo all winter, and refused to unload her. Capt. Green was not aware of this fact until after the Lewiston had arrived at Ogdensburg, as she came down without a bill of lading. In fact, he had chartered her for a return cargo of coal from Buffalo to Chicago. This charter, of course, had to be canceled.

The boat wintered at Ogdensburg and held the cargo. Capt. Green put in a claim for demurrage, but it was not allowed, and it was then carried to the courts. It has been pending for two years. The case in part is as follows: It seems that Mr. Harris, the agent for the transportation company at Chicago, previous to the Lewiston's charter, had made arrangements with Dan Helm, head man in W. M. Egan's office, to furnish him with a number of boats to hold grain in winter storage at Ogdensburg. Through some misunderstanding the Lewiston, it is said, was given one of these cargoes.

Judge Coxe, in deciding the case, said that under the previous arrangement with Mr. Harris and Mr. Helm, that Mr. Harris had right to assume that the Lewiston was one of the boats which was to hold her cargo all winter, as Mr. Helm had failed to tell Mr. Harris whether she was to hold the cargo or not. The point which the judge decided on is that it was the failure of Mr. Helm to notify Mr. Harris that the Lewiston was not one of the boats which would hold her cargo, and that she should have been unloaded upon arrival. The judge, it is said, intimated that Mr. Helm knew that the elevators at Ogdensburg were crowded, as he had taken vessels to hold grain in winter storage.

In summing up the case, Judge Coxe refused to allow Capt. Green's claim for demurrage, but he did allow him the freight, with the interest and costs.



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CLEVELAND, O., DECEMBER 3, 1896.

WE have received from the branch Hydrographic Office, Cleveland, a copy of the annual report of the Hydrographer U. S. N.

MARINE insurance on all vessels below A1 rating closed Nov. 31 and there are few if any extensions applied for. Larger steamers on their first letter can go on working up till December 10, when special rates will be asked for a later extension if required to reach a port of safety.

As noted several weeks ago in these columns, lake shipyards will not be idle during the winter months, several of the yards have contracts for nearly all they can take care of and the last order placed this week was for a 4,000 ton schooner or consort to be built by the Globe Iron Works Co., of Cleveland, to the order of James Corrigan.

A LAKE shipyard has just about completed a new revenue cutter and several light-ships have been built on the lakes, now we find proposals asked for three composite light-vessels and two steam tenders to be delivered on the Atlantic coast. This medium-sized departmental tonnage can be built at any lake shipyard and we hope that in the abstract of bids a lake shipbuilder will be found to the fore in at least a portion of the work.

BUT little is heard, and perhaps less done, towards the project of damming or curtailing the outflow of water at Niagara. The country tributary to the lakes as a water-shed, is being regularly denuded of its timber, making a less even supply than formerly and a more positive inequality of levels each year. Such a condition is likely to continue, and to be more in evidence when the opening of the Chicago canal makes a second Niagara to drain the lakes. It would be well to have this question thoroughly in hand, so that when the necessity arose, if it is not already here, work on reducing the outflow could begin without further loss of time.

ACCORDING to the annual report of Hon. Daniel S. Lamont, Secretary of War, the tonnage passing through the Detroit River last year exceeded the combined net tonnage of London and Liverpool as reported for the year 1894. Figures won't lie, but lots of people can figure; moreover, statistics are not always what they appear to be. The distinctly local passenger and cargo trade on the Thames and Mersey is not reckoned in the traffic of the ports, and coastwise or domestic transportation is kept separate from that of the foreign or oversea business. However, we leave our British contemporaries to handle this part of it, if they see fit to maintain the full credit of their two greatest seaports.

CONSERVANCY OF RIVERS AND HARBORS.

Without a question the way to do a thing is to do it and Chicago is the port that knows how. Let us glance for instance at the ports of Buffalo, Cleveland and Chicago. Major Symons, of the Corps of Engineers, U. S. A., has just opened bids at the former port for a two or three million dollar-government contract for building a breakwater, etc., a beneficent work of general advantage to all commerce frequenting that port and essentially a federal undertaking.

The port of Cleveland has just issued a quarter of a million of dollars worth of bonds for improving, that is, dredging, widening and straightening the Cuyahoga River, which by the way is on the order of local or municipal work and completely distinct from federal projects. We now have the difference between federal and municipal work and jurisdiction outlined, as being carried on at the two last mentioned ports. As we have said, however, it takes Chicago to do it, \$700,000 was the modest sum that the last Congress appropriated for improving Chicago River and now we learn that it is the unanimous opinion of the members of the Chicago River Improvement Association that congress intended the river should be widened as well as dredged, moreover, it was also ruled upon and unanimously decided in the affirmative that the money was meant for the improvement of the river, not only by dredging, but by widening it also, and buying property for such purposes. General T. J. Henderson, Congressman E. D. Cooke, and B. A. Eckhart, president of the Drainage Board, were invited to give their views of the bill, and all expressed their opinion that widening as well as dredging was intended in the bill passed by congress. Most positively Chicago should have such a preference over Cleveland, simply because they, the residents of Cook county, know how to ask for and obtain what they desire, while the more conservative element found in Cuyahoga county, Ohio, bond themselves to the tune of a quarter of a million of dollars for exactly the same purpose. However, the Chicago River Improvement Association are not disbursing the \$700,000 as the amount will be at the disposal of Major Marshall, Corps of Engineers, U. S. A., and it would appear that he understands the appropriation to have been meant for dredging purposes, maintaining depths, removing temporary obstructions, etc., and not by any means as a fund to purchase Chicago real estate with. Notwithstanding the government engineers' views on this question, we may again affirm that the "I will," of Chicago is sure to corral what it desires and to this end the river committee passed a resolution authorizing General Henderson to confer with the Secretary of War and find out what is necessary to fulfill the requirements of the law so the appropriation can be expended upon the improvements necessary for navigation. If he finds it is necessary to have an amendment of the bill passed, he is authorized to confer with Congressman E. D. Cooke and B. A. Eckhart, president of the Drainage Board. The question is not broached about issuing bonds to cover municipal and other local improvements, simply an amendment to the bill is found necessary so that the federal government may enter into condemnatory proceedings and purchase whatever property is necessary to improve the port. Ohioans should not be wanting to take advantage of the example set them and instead of issuing bonds set their congressmen to work on a bill to facilitate the general commerce of the port.

According to Major Marshall's report to the Chief of Engineers there had been expended up to October 31 \$1,178,959 for the improvement of the Chicago harbor and for dredging the river, beginning the forks and continuing on the two branches. The approved project of August 17 contemplates the expenditure of \$360,000. This project has in view dredging Chicago River from the mouth to the stockyards on the south branch, to Belmont avenue on the north branch, as far as may be permitted by existing docks and wharves, to a depth admitting navigation by vessels of 16 feet draft. Expenditures since 1870 have resulted in the completion of the outer harbor except that dredging will have to be done to give 16 feet depth at low water throughout the required basin; in the completion of the exterior breakwater, 431 feet in length, keeping dredged the entrance to Chicago River, and maintaining the various piers and breakwaters.

THE season is now practically closed.

A NORTHERN OHIO DAILY MISLED.

Under the caption of "How to Save Millions," the Cleveland Leader leads off and rants in the following strain. Quoting literally from the editorial to the last line.

"The people of the United States pay about \$200,000,000 in gold annually to the owners of foreign ships. Ninety per cent of the grain and merchandise sent out of and brought into this country are carried in ships which fly foreign flags."

To obtain foreign gold our produce must be exported, we can't do it ourselves. Hence the benefit of having others do it for us. The same applies to our imports.

"From the year 1789 until the year 1828 an American law laid an extra tax on all merchandise brought into American ports in foreign bottoms. The result was that American shipping was greatly promoted and the stars and stripes were to be seen in almost every harbor of the world. And American gold was kept at home."

When we carried our own produce, also imports, the era of wooden shipbuilding existed. It does not to-day. The United States adopted duties at the beginning of the government as a matter of reprisal for discrimination against American vessels in foreign ports. When it became effective the discrimination tax or bounty was abolished, and in 1789 how much American gold was mined anyway.

"The policy of Great Britain is to give bounties to its merchant marine and to thus make the British shipping industry prosperous and permanent. On account of the difference in wages of workingmen ships can be built more cheaply in Great Britain than in the United States. Thus British ship owners have a double advantage over American ship owners. First, they receive subsidies from their government, and, second, their investment in a ship of a certain size and capacity is smaller than the investment necessary to be made in this country in a ship of the same description."

This paragraph is an ignorant fabrication all through. Cramps, of Philadelphia, have bid for English naval tonnage and can construct on an almost equal basis. It is pure rot to say that Great Britain gives a bounty or subsidy to the cargo carriers of their merchant marine service, on the other hand, that government hampers and discriminates against its own tonnage until it has been and still is being driven under foreign flags.

For these reasons American shipping has almost disappeared from the high seas. It is stated that only 11 per cent. of the foreign trade of this country is carried in American bottoms. The remaining 89 per cent. is carried in foreign ships, and the owners of these ships take out of this country every year about \$200,000,000 in gold, all of which is paid to foreign sailors, foreign builders of ships, and other workingmen, and to foreign capitalists.

It is not for these reasons at all. Iron and steel became kings, timber was deposed, hence, the chief decadence of our tonnage.

The Republicans in their national platform of 1896 declare that "we favor restoring the American policy of discriminating duties for the upbuilding of our merchant marine and the protection of our shipping in the foreign carrying trade, so that American ships—the product of American labor, employed in American shipyards, sailing under the stars and stripes, and manned, officered, and owned by Americans—may regain the carrying of our foreign commerce."

In this connection we are glad to know that Senator Elkins of West Virginia, will, at the coming session of congress, press his bill which lays an additional duty of 10 per cent ad valorem on every dollar's worth of goods brought into American ports in foreign ships. The bill will hardly become a law this winter because President Cleveland is believed to be against any legislation of this kind. However, Senator Elkins should bring his bill before the senate so that it may be discussed in congress and in the newspapers, for public opinion will thus be aroused and created and the Republican congress, which meets a year from December, will carry out the pledge made at St. Louis.

Wasting as little space and printers' ink as possible we reply to these two paragraphs by stating that nearly every line is buncombe, and means nothing even to the uninitiated. Discriminating charges on the oversea tonnage of the world. Ay! Such a course is simply impracticable, for a variety of reasons. It is an invitation to retaliate, which every other nation would accept; it is an act of embargo, a violation of our treaties and obligations with thirty-three maritime powers, and is so distinctly "off the trolley" as not to be worth another word of reply. Finally, when the Cleveland Leader attempts anything in this way again, it ought to look somewhat deeper into the question before accepting an unmeaning plank in its Republican platform.

It is with some degree of pride that we note the two foremost sea-ports working in unison, or rather arriving at the same conclusion at about the same time. With this issue we announce the plans and specifications complete for a first class steam pilot boat for New York and we are in a position to state that the first of the two steam pilot vessels, built by Messrs. Murdock & Murray, Port Glasgow, for the Mersey or Liverpool Pilot service arrived there on the 19th of November. Liverpool had, or perhaps yet has, a splendid fleet of sailing pilot boats, and it must have gone very hard with those accustomed to handle and pin their faith on canvas to give up to the idea of steam. The same can also be said of New York, but instead of one we should advise the "Mother Carey's chickens" who cruise around Sandy Hook and as far east as the Georges to contract for another steam pilot boat at an early date.

AN inquiry relative to the conduct of the officers of the local steamboat inspection service at New York is being held this week before Supervising Inspectors M. J. Galvin, E. P. Chancellor and W. H. Murdaugh. The court convened on Tuesday, and it is likely to be several days before the decision arrived at in the case can be made public. Whichever way the inquiry may turn, it is a foregone conclusion that one or more of the officials will be dismissed from the service, while the position of others will be made less secure than before the inquiry started. It seems very strange that these government officials, holding excellent berths and drawing fairly liberal salaries, could not get along with their business without bringing in tales on one another. A little gossip and a slight lack of office discipline must account for the regrettable features now being inquired into.

It is of great importance that the officers of the Lake Carriers' Association bear in mind that on the opening day of the next session of Congress there is a special order in the Senate to bring up the bill for the erection of a bridge across the Detroit River. If all interests are of the same mind as formerly, work is again cut out to offset the spanning of the river in the interests of the railroad companies. It is believed in certain circles that a bridge will eventually be thrown across the river at some point. Should such a result ever transpire the locality where there is the least danger to vessel traffic, on account of a bridge being located, ought to be carefully looked after now, and this, too, more especially for future guidance, in assenting to a fighting against proposed positions.

NIAGARA is harnessed and her tremendous power transmitted to Buffalo as well as the surrounding districts. The distance covered by the line between Buffalo and the Falls is 27 miles, and the expert electricians who have the work in charge estimate that the loss of energy will be less than 10 per cent, and may not much exceed five. The power, it is said, will sell in Buffalo for \$36 a horse-power per annum, and under its contract with the city the company must increase its capacity 10,000 horse-power per year until the maximum of 50,000 horse-power has been reached. Now what is the matter with sea coast ports utilizing the rise and fall of tides in a similar manner or where there is a strong current in the various rivers of the country, not to speak of the power of the "Father of Waters."

OH, this change of administration is a terror, especially do we find it so in the steamboat inspection service. The local inspectors were placed under the civil service rules some months ago but even this does not deter or prevent the bee from getting into the bonnets of political aspirants and office seekers, as men are after the scalps of present incumbents. With the supervising inspectors it is somewhat different, as that office is appointive and pays a neat \$3,000 a year with only a modicum of responsibility and no labor to speak of. The present lake staff is A1, of course there are just "as good fish in the sea as ever was caught," but it is not bad advice to leave well enough alone.

TO READERS outside of the lake trade the term "wild," such as wild boats, wild charters, etc., will no doubt sound rather strange. The term is applied in the same sense as tramp steamer is used on the coast and ocean. Another exclusively lake term is "package freight,"

meaning general cargo, although the word freight is indiscriminately used instead of or when cargo is meant. The foregoing is railroad parlance adapted to suit or to be understood in the lake marine trade.

WEEKLY FREIGHT REPORT.

The close of navigation is a severe disappointment to vessel owners in so far as freights are concerned. There has seldom been so quiet a closing and such low freights offered for the last trip as is now evident, and the general impression is that the "jig is up" for the year, although A1 vessels can have their insurance extended to the 10th of the month. The western blizzard which prevailed last week caught the north shore and the head of Lake Superior, thus freezing ore in the pockets and stopping shipments. The grain crop being short, coupled with earlier brisk shipments, and other causes, all tended to place the freight market where it has been for the past week, that is, void, defunct, nil, no rate quotable out of Duluth, but the nominal figure of two cents offered; even Chicago rates are dull and keep low. There has been a fair jag of coal to go west and a good deal carried through the week at three times the price paid during the summer months—however, there is but little use of carrying coal west without having a return cargo, and these conditions together with the hard, cold snap and stormy weather, serve to chase even the best tonnage into winter quarters. Yet, there is ample time for a week of fairly mild, steady weather, and it is quite possible that the boats now ice-bound at Port Arthur, on Lake Superior, will be able to thread their way down through Mud Lake to clear water on the lower lakes.

Duluth to Buffalo is placed at two cents on wheat, with but little chartering, as there is no grain to come forward, although there is 16,000,000 bushels in store at Minneapolis. The Port Arthur shipments would no doubt have been lively for ten days at least if the cold snap had not come along and froze up the Kamistiquia River, thus preventing vessels from reaching the grain elevators, and a charter at 3¼ cents Fort William to Chicago has had to be canceled.

Chicago rates have fluctuated during the week from 1¼ cents to 2 cents on corn, 2¼ on wheat, and corn is now quoted at 2 cents as a basis for new charters, with a strong effort being made to make it 2¼ cents, vessels expecting to return there with a coal cargo before navigation closes.

Ore shipments are, of course, all through with and nothing more can be expected this season from that product. Last charters from Marquette were made at 95 cents. Coal rates are the only encouraging feature of the freight market, but it is now too late to take advantage of this improvement. Buffalo to Lake Michigan and to hold during the winter if required, anthracite 60 cents; last charters to Lake Superior 50 cents. From Ohio ports on bituminous, 50 cents to Lake Michigan, though 60 cents was paid Ashtabula to Milwaukee, and quoted as the Lake Superior rate with few takers, as there is nothing to return with, and this week will about see the last of coal cargoes for the season.

MICHIGAN PORT STATISTICS.

The Treasury Department, Washington, D. C., has completed the annual statement of customs business for the fiscal year ended June 30, 1896. The details of the five Michigan ports are as follows:

DETROIT.—Vessels entered, 5,129; entries of merchandise, 24,535; documents issued to vessels, 503; duties and tonnage tax, \$779,378; aggregate receipts, \$792,535; value of exports, foreign, \$79,506; domestic, \$10,623,442; expenses, \$81,137; persons employed, 72; cost to collect a dollar, .102.

GRAND RAPIDS.—Entries of merchandise, 716; duties and tonnage tax, \$15,589; aggregate receipts, \$15,596; expenses, \$2,670; persons employed 2; cost to collect a dollar, 1.71.

PORT HURON.—Vessels entered, 3,882; vessels cleared, 4,003; entries of merchandise, 5,156; documents issued to vessels, 535; duties and tonnage tax, \$50,099; aggregate receipts, \$57,933; value of exports, foreign, \$31,576; domestic, \$6,927,036; expenses, \$48,795; persons employed, 48; cost to collect a dollar, .842.

GRAND HAVEN.—Vessels entered, 5,979; vessels cleared, 5,908; entries of merchandise, 17; documents issued to vessels, 540; duties and tonnage tax, \$1,791; aggregate receipts, \$1,986; value of exports, domestic, \$87,540; ex-

penses, \$6,653; persons employed, 13; cost to collect a dollar, 3.349.

MARQUETTE.—Vessels entered, 9,067; vessels cleared, 9,007; entries of merchandise, 1,599; documents issued to vessels, 226; duties and tonnage tax, \$12,747; aggregate receipts, \$14,341; value of exports, foreign, \$4,200; domestic, \$5,262,693; expenses, \$21,561; persons employed, 23; cost to collect a dollar, 1.50.

WORK AT THE SHIPYARDS.

The Chicago Ship Building Co. filled up with contracts for new tonnage within two or three weeks. That company now has orders for five large vessels with a further report that figuring was being done on a large steel tow-barge for the Milwaukee Tug Boat Co. while plans and specifications have been made out for such a craft, the contract has not yet been signed. The Globe Iron Works Co. besides completing the new revenue cutter, are laying the keels for three 4,000 ton steel schooners. The Cleveland Ship Building Co. are at work on two 400 foot cargo steamers. Captain James Davidson, of Bay City, as we have announced, is building three wooden vessels, one steamer and two schooners, figuring on other new work and has already booked some extensive repair and rebuilding jobs. F. W. Wheeler & Co., are laying low but more work is certain to be placed at that yard in a very short time, the report that Capt. Blodgett was to have a vessel built there has not been verified, however, when the contract is signed it will be for a steamer fitted for the Welland Canal and Lake Ontario trade. The American Steel Barge Co. count upon over \$300,000 worth of work this winter and will depart from the whaleback model or type to the extent of building a 400 foot schooner rigged tow-barge on ordinary lines on the channel plate system and up to the latest requirements of that class of tonnage. The Union Dry Dock Co., Buffalo, have under construction a steel oil tanker for the Standard Oil Co., and some rather extensive refitting and rebuilding work for the winter, but besides this we are safe in placing contracts for new work at the Union in the near future. The U. S. Light House Board advertise in this issue of THE RECORD for proposals on the building of a fleet of five vessels viz.: three light-ships and two steam tenders. As a number of these vessels as well as other departmental tonnage has been turned out from lake shipyards it is not unlikely that private orders will be supplemented by the awarding of at least a portion of the government work to lake yards.

SHIPMENTS OF IRON ORE.

The ore shipping season is practically over and it is now possible to secure estimates. The aggregate ore tonnage sent forward this year from the head of the lakes—Duluth, Two Harbors and Superior—has been greater by nearly 150,000 tons than in any previous year. The total ore shipments from Lake Superior will be fully a million tons less than last year. The shipments from Duluth, Two Harbors and Superior this season will be 3,976,711 tons as compared with 3,829,922 tons last year, indicating an increase of 146,789 tons.

At the opening of navigation it was figured that 12,000,000 tons of iron ore would be sent forward during the season but the depression that came soon after the season opened paralyzed the iron industry. The production of pig iron and steel was reduced to about half the capacity of the country and prices descended to a level never before known. The ore shipping continued active until the season was pretty well advanced and then slackened up as there was no sign of improvement until it was too late to affect the season's business to any appreciable extent.

Instead of 12,000,000 tons therefore the season's entire shipments of iron ore from Lake Superior will not exceed 9,350,000 tons, a decrease of over a million tons as compared with last year's shipments, and two and three quarter millions under the estimates made in the early spring of the shipments for this year. Had the full estimate of ore been forwarded this season would have been one of the most prosperous for vesselmen in the history of the lakes.

THE passenger steamer City of Buffalo, of the C. & B. Line, made the run from the Cleveland breakwater to Detroit in 5 hours and 57 minutes, from Cleveland to the Dummy light in 2 hours and 21 minutes.

SCOTT'S NEW 1896 COAST PILOT

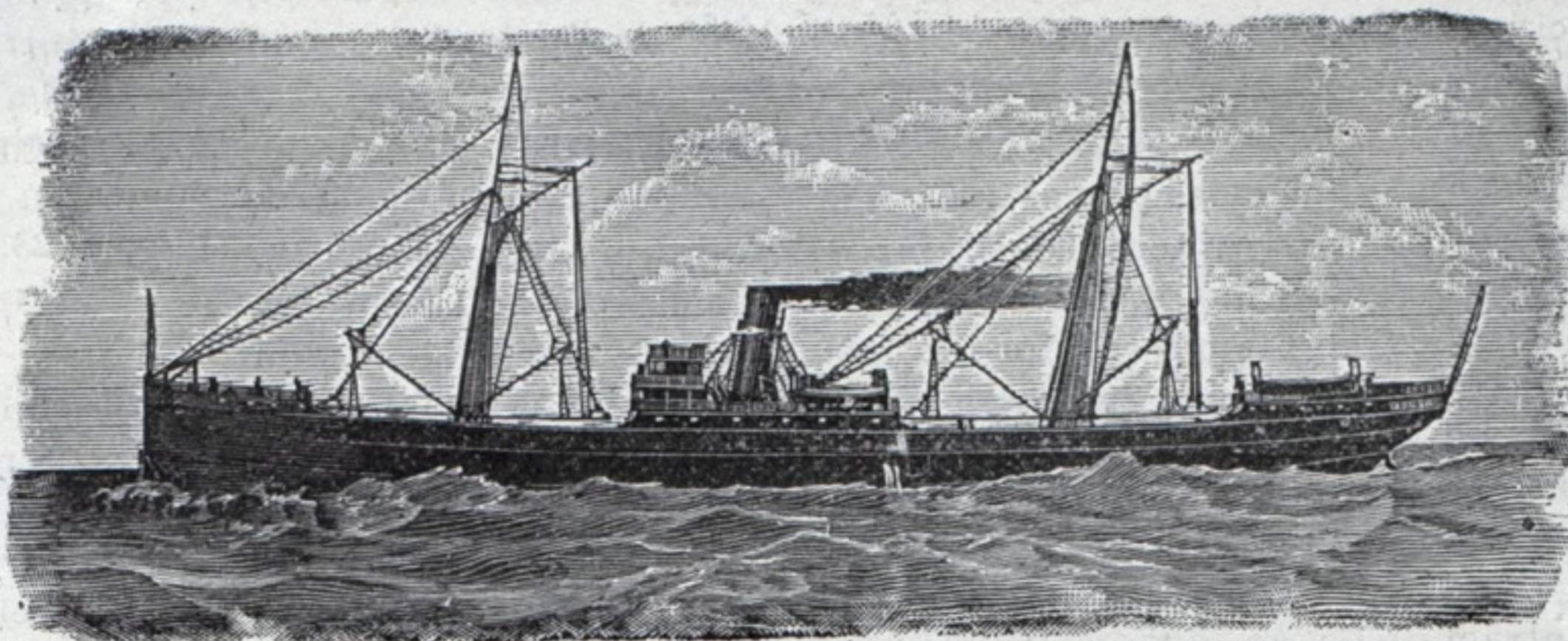
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RIVERS AND HARBORS.

Hon. Daniel S. Lamont, Secretary of War, in his annual report just issued, speaks to the point, but somewhat tersely, of the Great Lakes, as follows:

"The new lock at the falls of the St. Marys' River though not fully completed, was thrown open to commerce August 3, 1896. This lock, which is 800 feet in length and 100 feet in width, with a depth of 21 feet on the miter sills, and a single lift approximating 18 feet, is an essential link in the chain of improvements which are to give a ship channel, with depth of 20 feet, connecting the waters of the Great Lakes between Chicago, Duluth and Buffalo. This work, now nearly completed, is one of great magnitude, and its importance to the interests of navigation may be judged by the fact that its total cost from its inception to completion, while amounting to several millions, will be but about 5 per cent. of the value of the commerce passing through the Detroit River during the season of 1895.

"During the last fiscal year, 16,290 vessels passed through the canal at St. Mary's Falls, aggregating 15,648,025 registered tonnage, and carrying 14,399,332 tons of freight, exceeding the net tonnage through the Suez canal, during the year 1895, by nearly 6,000,000 tons. The traffic through this canal in the year 1895 was the largest in its history.

"The total amount of freight carried to and from Lake Superior in 1895 exceeds that of 1894 by 14 per cent., an increase largely due to the improvements in Hay Lake channel, St. Mary's River, which shortens the route 11 miles and provides safe navigation by night.

"The commerce passing through the Detroit River during the year amounted to about 25,850,000 tons, with estimated value of \$275,000,000, an increase of 7 per cent. over the commerce of the preceding year. This tonnage is in excess of the combined net tonnage of London and Liverpool for the year 1894 as reported.

"But little change has occurred in the water levels of the Great Lakes during the past year from corresponding levels of 1894, and as no water has yet been drawn for use in the Chicago drainage canal, no further facts can be given as to the probable effect of abstracting 10,000 cubic feet of water per second from Lake Michigan. The importance of inaugurating a series of observations and gaugings, which will provide reliable data concerning the lake levels and the probable effect of the Chicago drainage canal and the deepening of connecting channels, was stated in my last annual report, but no action in the matter has yet been taken by Congress.

"The law now provides that a notice of thirty days shall be given to the owner of a sunken or wrecked vessel in any river or harbor of the United States before the Secretary of War may direct the removal of such obstruction to navigation. This interval of notice is altogether too long to be consistent with safety to navigation, and is the cause of frequent and well-founded complaint by those interested in shipping. But little

time is required for the preparations necessary to begin such removal of obstructions to navigation, and a change in the law to permit the more prompt exercise of the powers of this department, when individuals are tardy or negligent, is earnestly recommended.

"The total expenditure for river and harbor improvements, during the year ending June 30, 1896, including those of the Mississippi and Missouri River Commissions, was \$17,039,731.51. Including the amounts appropriated by the act of June 3, 1896, there was available for expenditure on rivers and harbors July 1, \$26,020,974.79. The estimates submitted to Congress only include the amounts for which the government is obligated by existing contracts. It is understood that the appropriations for other works made by the act of 1896 were to cover the operations of two years, and that no further appropriations will be made for such works by the present Congress.

"The last river and harbor act provides for continuing the improvement of the stretch of the Mississippi River from the head of the Passes to the mouth of the Ohio, under the direction of the Secretary of War, in accordance with plans, specifications, and recommendations of the Mississippi River Commission, as approved by the Chief of Engineers, for the general improvement of the river, for the building and repair of levees, and for surveys. This act appropriated \$625,000 outright for the work, and additional expenditures were authorized, amounting to \$8,375,000 during the next four years.

"By a majority vote the commission on January 11, 1896, adopted resolutions to the effect that the plan of general and permanent improvement of the Mississippi River by means of bank protection and contraction work, should be discontinued, and that the practical results of deepening the channel and prevention of floods, contemplated by the act under which the commission was appointed, can be attained with greater economy, more probability of success and in less time by the dredging of channels through shoal places during low-water seasons, and the maintenance, in co-operation with the state and local authorities, of an effective levee system. Therefore, the Mississippi River Commission is dismissed from further service.

"In the last annual report of the department the question was presented whether the very costly improvements on the Missouri River were justified by the interests of the commerce involved. The river and harbor act of June 3, 1896, appropriates \$300,000 for continuing this improvement, and provides for an additional expenditure of \$300,000 per year for three years from July 1, 1897. Congress having determined that this work should continue, it is desirable that the appropriations should be applied to systematic work in accordance with the plans of the commission. Arbitrary allotments from the appropriations for work in special localities, result in little, if any, benefit at such places, but interfere with systematic channel improvements, increase its cost, and postpone the time when navigation can receive substantial improvement."

THE LAKE ERIE COAL TRADE.

In the annual report of the chief inspector of mines of Ohio is a summary of coal shipments from Lake Erie ports from which it appears that the total shipments in 1895 were considerably in excess of the movement of the previous year, although considerably below the amount shipped in 1893 and 1892. The ports covered in the report are Toledo, Sandusky, Huron, Lorain, Cleveland, Fairport, Ashtabula, Conneaut, Erie and Buffalo. The Buffalo shipments are all anthracite, Erie shipments part anthracite and part bituminous, and the shipments from the other ports all bituminous. Conneaut did not ship any coal by lake until 1893, when shipments reached 23,184 tons. The following shows the shipments, including coal taken by vessels for fuel during 1895, 1894 and 1893:

Lake Ports.	1893.	1894.	1895.
Buffalo.....	2,703,763	2,485,255	2,620,768
Erie.....	625,023	711,928	727,184
Conneaut.....	23,184	89,023	166,073
Ashtabula.....	787,653	669,735	998,772
Fairport.....	234,089	300,923	325,064
Cleveland.....	1,512,308	997,513	1,055,480
Lorain.....	526,405	303,690	277,660
Huron.....	277,444	213,595	208,000
Sandusky.....	195,276	261,363	223,134
Toledo.....	938,533	836,232	716,099
Totals.....	7,773,588	6,869,257	7,318,234

During the season of 1895 757,735 tons of coal were taken by vessels for fuel. This includes Erie but not Buffalo. The fuel was taken aboard at the following places: Erie, 102,953 tons; Conneaut, 24,609 tons; Ashtabula, 209,443 tons; Fairport, 39,087 tons; Cleveland, 291,656 tons; Lorain, 14,953 tons; Huron, 17,000 tons; Sandusky, 11,028 tons; Toledo, 47,000 tons.

Cleveland sent 153,003 tons of coal to foreign ports and 610,821 tons to domestic ports. The total shipments of bituminous coal to domestic ports were 3,114,393 tons; to foreign ports, 349,785 tons; total shipments of bituminous coal taken as fuel, 4,221,913 tons.

CAPT. McLEOD, of Buffalo, has been inspecting for the underwriters the steel car ferry Pere Marquette, building at the yards of F. W. Wheeler & Co., West Bay City, for the F. & P. M. Railway Co., and he says she is the finest vessel of her kind ever built in this country. Wheeler & Co. look for a second contract as a result of excellent work on this vessel.

TWO TOO CAREFUL.

It is quite correct that people should go away from home to hear news of home. Here is a story from Fairplay, London:

The "good stories" about Commodore Vanderbilt were numerous, and did not end with his death, which occurred soon after that of the famous dry goods millionaire, A. T. Stewart. William B. Astor had predeceased both, and the story goes that Astor, arriving on the banks of the Styx, hailed the old boatman Charon: "Say, old man, how much to put me across?" "Five dollars," replied Charon. "Too much," said Astor. "I'll give you three." "Won't trade," replied the ferryman; "I never break my price." So Charon pushed off and left Astor disconsolate on the hither bank. By-and-bye the shade of A. T. Stewart came along on its way to the Styx. "Snakes! if that ain't Astor! Why, Astor, what in thunder air yer doin' here all this time?" cried Stewart. "It's that old cuss Charon," said Astor; "he wants to charge five dollars to put me across. Now we'll trade for the two." So they hailed Charon, and offered him the five dollars to put both across as one load. But Charon declined, and insisted on five dollars a head. Now Stewart was very close-fisted, and never liked parting with a dollar he could save, so he too sate down disconsolate, as Charon once more pushed off. By-and-bye he brightened up with an idea. "Say, old man, we'll just stay here till old Vanderbilt comes along. He'll soon start an opposition boat, and we'll get across for a dollar." And there the Commodore found them the next year—if my informant did not deceive me.

A JULES VERNE STORY.

It is now announced that a shuttle-shaped sub-marine boat, which may sink to any depth, has been patented by Messrs. Freese & Gawn. Beneath the operator's cabin which is raised as a small dome above the center, is a chamber, to the bottom of which the exterior water has constant ingress through an open tube. Inside is also a reel containing a hose of great length, the inner end being connected with a cock in the top of the chamber. The outside end of the hose protrudes through a float, resting always upon the surface. A pump sucks the air into the chamber, pushing the water out underneath as it enters. If water leaks in through the tube it passes to the bottom, the air always remaining on top. The living compartments of the boat are supplied with air in this way, as are also the governing chambers, alter-

nately filled with water and air to make it sink or rise. The operator observes the goings on above the surface through a telescope, with mirror attachment, which may be pulled out to any length or turned in any direction. The inventors suppose a case as follows: If the boat is going to affix a torpedo to the hull of a battleship, enough air is taken into the chamber to supply the crew for a given time and the hose and float are reeled in. A register above the mechanism of the operator indicates how far below surface he sinks the boat. The trip is carefully made until the hostile hull is reached. One of the crew passes from the cabin proper into an adjoining water tight chamber, where he dons a diving suit. He passes through a water tight door into a third chamber. Closing the door behind he opens a third door which lets the water into the last chamber reached. He goes out, and standing upon the deck of the submarine boat, affixes the torpedo. His diving helmet is supplied with air by a tube connecting with the air chamber of his boat. His errand accomplished, he enters the boat, the water being pumped out of the third chamber before he passes to the cabin. The submarine boat then moves off, leaving the torpedo to do its deadly work at a set time.

THE WILFORD WATERPROOF CLOTH.

The attention of our readers is called to the new advertisement on this page of current issue, wherein the merits of the Wilford Matchless Waterproof Cloth is mentioned. From samples forwarded to this office we judge from the flexibility and strength of the material, that there could be nothing more durable and light than the "Matchless." Our samples are white and brown in color, and appear to be all that the manufacturer claims.

We further learn that the fabric is made from twisted thread and pure flax, which renders it strong and durable. It has at present a large sale in Europe, and has been introduced in the German and Belgium armies for tents and wagon covers. The Buffalo agent is D. Provoost.

AUTOMATIC BOILER FEEDING DEVICE.

A very simple plan has been adopted by Messrs. Yarrow, which is found to give good results in practice. The system consists of feeding each boiler separately by a Worthington donkey pump, and placing the mouth of the steampipe for supplying the donkey close to the water level of the boiler. If the water rises too high it

will enter the donkey steampipe and choke the cylinder with water. Then the donkey will almost stop, while if the water level falls, then the donkey will work fast and pump the level up again. It has been found that when the water enters the steam cylinder the pump does not pound in an exceptionable manner, as might be expected, and also that the pump does not stop when the water enters the steam pipe, but runs slowly, because the steam cylinder is larger than the water cylinder, the pump actually taking more water out of the boiler than it puts in. A further point to note is that the heat in the water taken from the boiler is not lost, but is returned to it. It is said that in a recent three-hours trial of a torpedo boat having this feed-regulating device, the valves were not touched once.

MESSRS. LAIRD BROS., of Birkenhead, England, have turned out a very smart torpedo-boat destroyer for the Chilean government, and on the trial, which took place on the 15th of November, an average speed of 31.8 knots was attained.

WM. WILFORD'S



MATCHLESS WATER-PROOF CANVAS

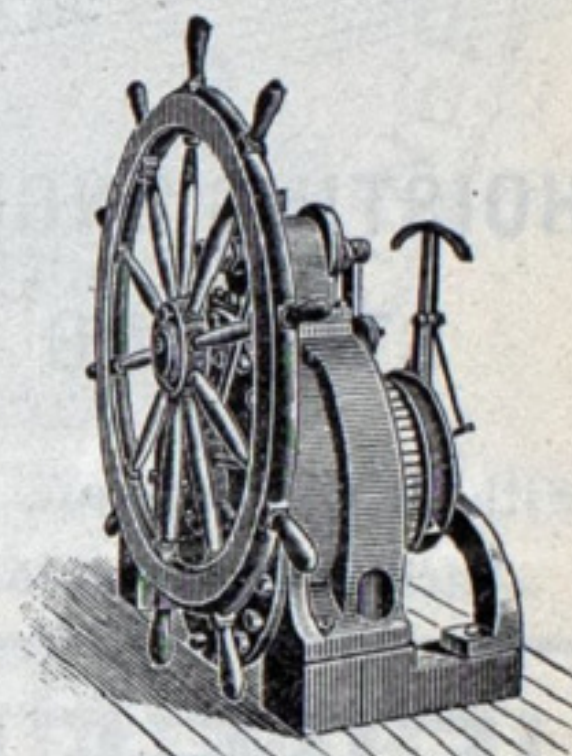
The best in the market for hatch covers, is stronger, lighter, and more durable than any water-proof goods yet produced. It is made of a twisted thread of pure flax which renders it very strong. It will not crack like cotton goods which is a great advantage.

EDWARD A. BUNKER, NEW YORK.

Room 617 27 and 29 William St.,

QUEEN CITY Hydraulic Steerer.

The best and most powerful Steerer for Tugs, Steamers, Etc.



MANUFACTURED BY
QUEEN CITY ENGINEERING CO.,
BUFFALO, N. Y.

Write for Prices and References.

TOBIN TRADE MARK BRONZE.

Tensile Strength, one inch cold drawn rod, upwards of 78,000 lbs. per square inch. Torsional Strength equal to the best Machinery Steel. Non-Corrosive in sea water. Can be forged at cherry red heat. Round, Square and Hexagon Bars for Bolt Forgings, Pump Piston Rods, Yacht Shafting, Etc. Spring Wire, Rolled Sheets and Plates for Pump Linings and Condenser Tube Sheets, Centerboards, Fin Keels and Rudders.

Ansonia Brass and Copper Co.,

SOLE MANUFACTURERS,
SEND FOR PAMPHLET, 19-21 CLIFF ST., NEW YORK.

THE CHASE MACHINE COMPANY.

MACHINISTS, ENGINEERS AND BLACKSMITHS,
MANUFACTURERS OF

Land & Marine Engines & Steam Pumps,

SOLE OWNERS AND MANUFACTURERS OF THE
CHASE AUTOMATIC FOG WHISTLE MACHINE,
IN USE ON NEARLY ALL LAKE STEAMERS.

Agents for ASBESTOS STEAM, BOILER AND PIPE COVERING.

Telephone 994.

111 Elm Street, CLEVELAND, O.

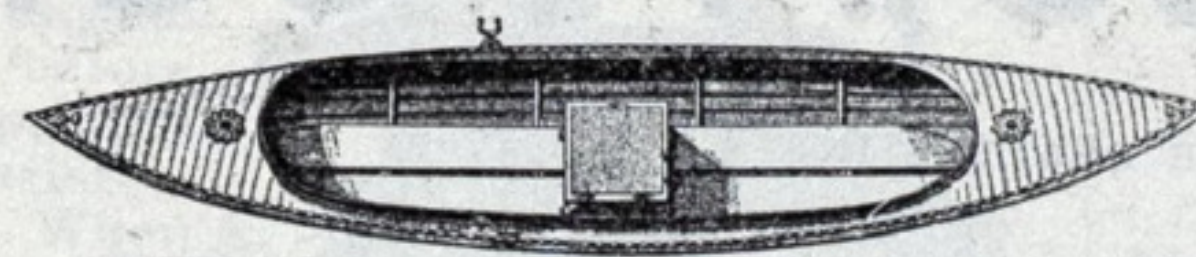
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Adopted by the English, German, French, Russian, Italian and United States Light-House Departments for channel and harbor lighting; over 500 gas buoys and gas beacons in service.

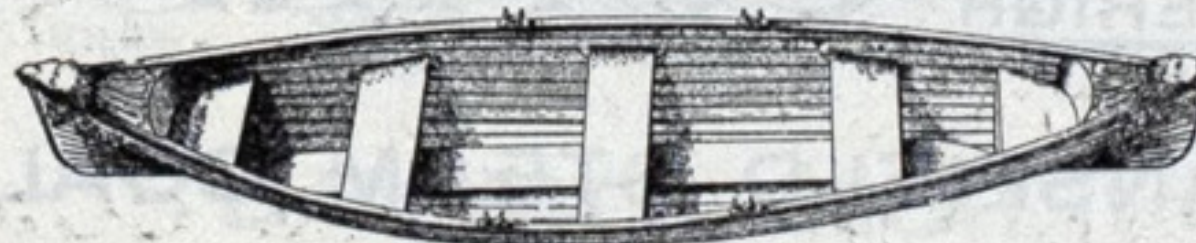
BURN CONTINUOUSLY from 80 to 365 days and nights without attention, and can be seen a distance of six miles.

BRILLIANT AND STEADY ILLUMINATION.
ECONOMICAL AND RELIABLE IN OPERATION.

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DOUBLE-ENDER PLEASURE BOAT.

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..Average Adjusters..

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SPECIAL FACILITIES FOR PLACING MARINE LINES.

GUARANTY BUILDING, BUFFALO, N. Y.

HAVE NO RIVAL!

in appearance, durability, and staunchness

MULLINS' METAL BOATS

are superior in every way. Need no repairs. Low in cost. Send for catalogue.

W. H. MULLINS, 252 Depot St., Salem, O.

For sale by A. G. SPAULDING & BROS., Chicago, JOHN P. BURKHARD, St. Paul, Minn., SIMMONS HARDWARE CO., St. Louis, Mo., H. C. SQUIRES & SONS, New York, N. Y., SAKS & Co., Washington, D. C.



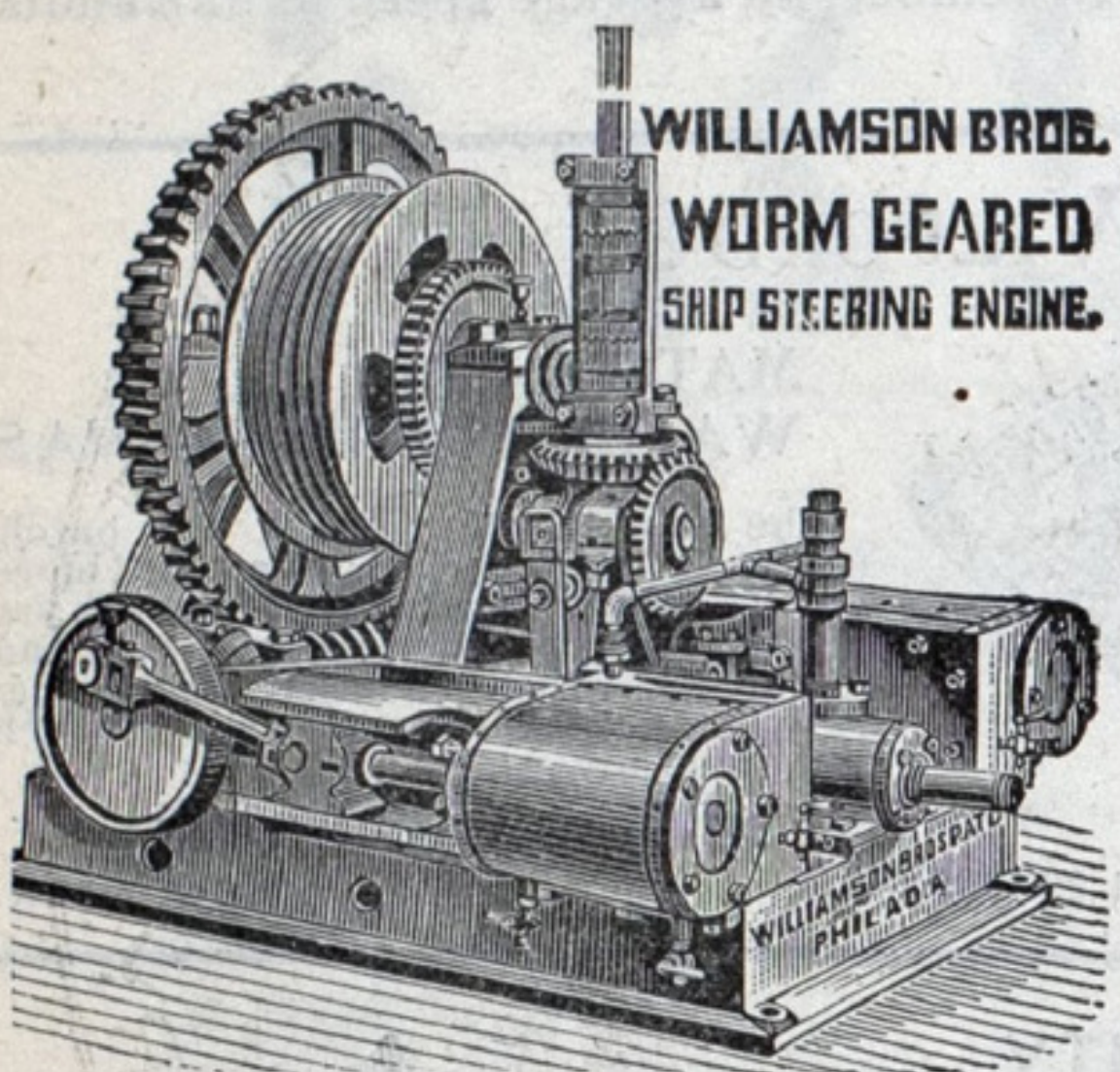
For Stationary, Portable, Traction Engines, Tugboats, &c. Thoroughly Reliable—Perfectly Automatic. JENKINS BROS., - Selling Agents, NEW YORK, BOSTON, PHILA., CHICAGO.

A. J. MORSE & SON.
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**HOISTING ENGINES and SHIP
 STEERING ENGINES.**

With either Frictional, Spur or Worm Gear of
 Various Patterns to Suit all Purposes.

ESTABLISHED 1871. INCORPORATED 1893.
MONTAGUE IRON WORKS CO.,

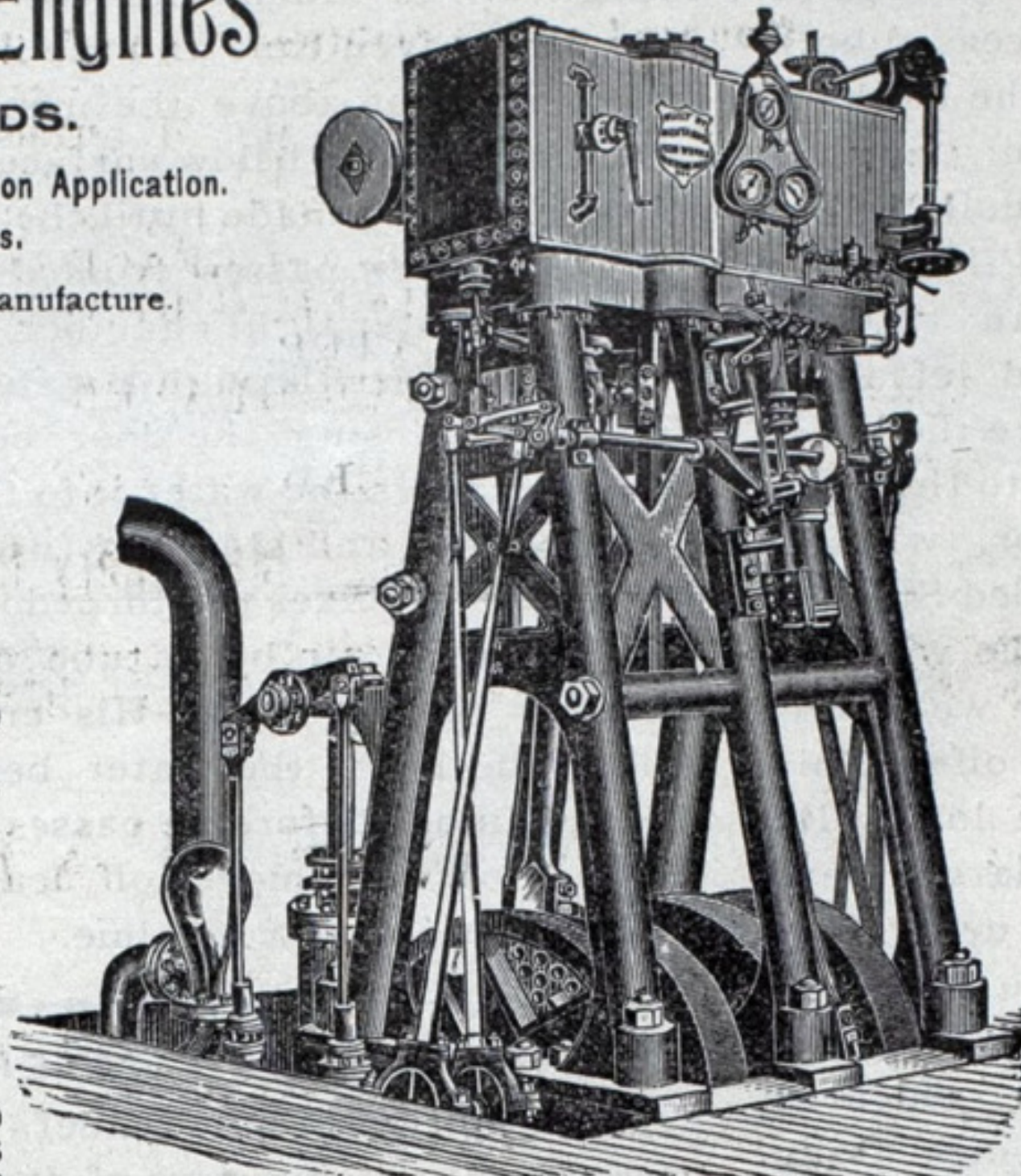
MANUFACTURERS OF
Marine and Stationary Engines

AND BOILERS OF ALL KINDS.

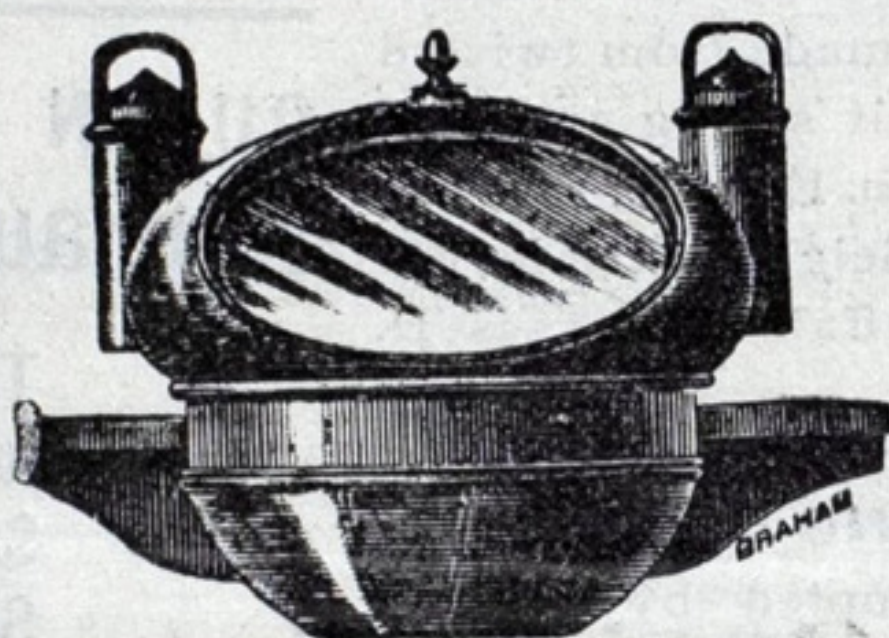
Heavy Castings a Specialty. Prices Quoted on Application.
 Fore and Aft Compound Marine Engines.

The Engines in the following boats are of our manufacture.

Tug, Hunter, Chicago, 15 and 28x22.
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 Tug, Zenith, Duluth, 18 and 36x30.
 Steamer Glenn, South Haven, 14 and 28x20.
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 Steamer Pine Lake, Charlevoix, 16 and 30x24.
 Passenger Steamer Pilgrim, St. Clair, 14 and 28x20.
 Steam Barge Iona, Grand Haven, 24 and 46x42.
 Steam Barge M. T. Greene, Chicago, 20 and 36x36.
 Steamer H. W. Williams, South Haven, 18 and 36x30.
 Steam Barge Mark B. Covell, Manistee, 18 and 30x26.
 Steam Barge Isabella J. Boyce, Michigan City, 19 and 32x26.
 Steam Barge Luella H. Worthington, Cedar River, 19 and 36x30.
 Passenger Steamer City of Kalamazoo, South Haven, 20 and 40x30.
 Steamer Oval Agitator, Chicago, 14 and 28x20.
 Tug E. G. Crosby, Muskegon, 16 and 30x24.
 Tug Peter Coates, Sault Ste. Marie, 10 and 20x16.
 Steamer Lorain L. South Haven, 12 and 21x16.
 Passenger Steamer Lotus, Escanaba, 16 and 30x24.
 Steam Barge Sachem, Grand Haven, 21 and 38x36.
 Passenger Steamer Bon Ami, Saugatuck, 14 and 28x20.
 Steam Barge Charles A. Street, Chicago, 20 and 36x36.
 Steam Barge Edward Buckley, Manistee, 18 and 36x30.
 Passenger Steamer E. G. Maxwell, Pentwater, 14 and 28x20.
 Passenger and Freight Steamer Bon Voyage, Saugatuck, 16 and 30x26.
 Passenger and Freight Steamer Mabel Bradshaw, Muskegon, 16 and 28x26.
 The engraving represents our 20 and 36x36 Fore and Aft Compound Marine Engine. We build them all sizes and guarantee them to give satisfaction. Prices furnished on application.



MONTAGUE IRON WORKS CO., Montague, Mich.



FRANK MORRISON, COMPASS ADJUSTER

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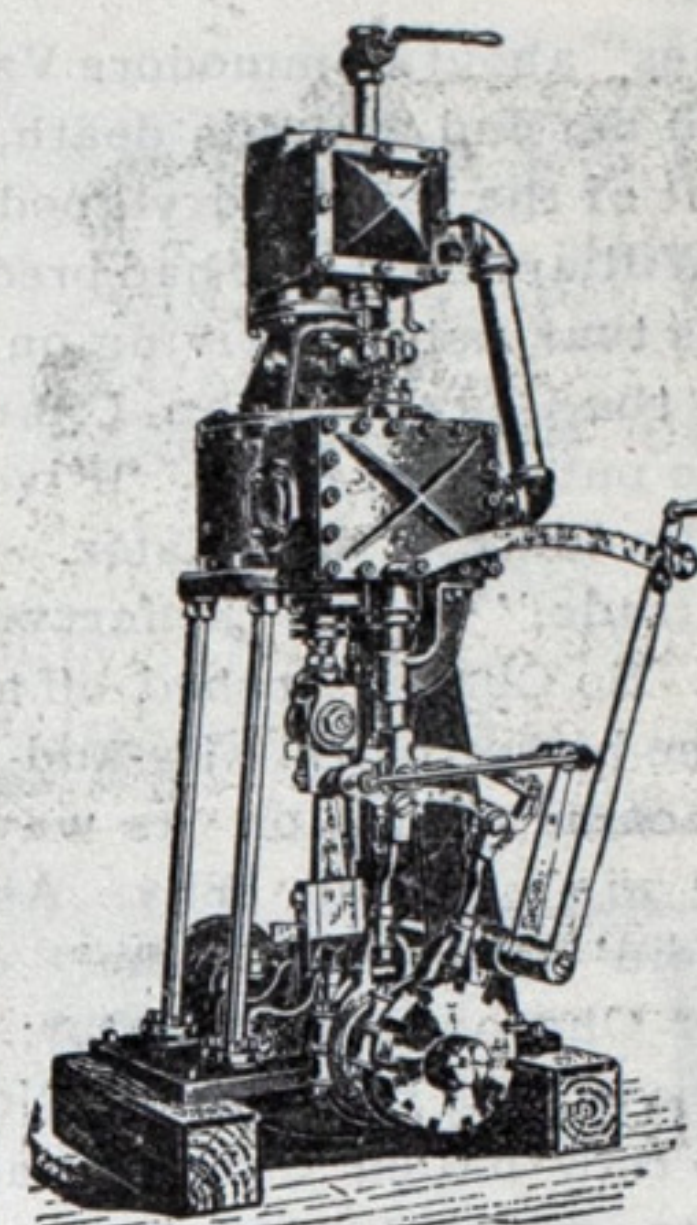
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COMPASSES, BAROMETERS, PATENT LOGS, BINNACLES, STEAM
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All Nautical Instruments Carefully Repaired.

Office with Upson, Walton & Co., 161 River St., Cleveland, O.

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SINGLE
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5 TO 200 HORSE-
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 and material and
 moderate in price.
 Send for cuts, de-
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Send for specifications, prices, etc.
 Good slips for laying up boats.

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Send for Circulars and Samples.

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 AND HAZLETON LEHIGH**

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....MANSFIELD STEAM COAL

Fueling Steam Vessels a Specialty.

Dock and Office at Canal Dock.

Either from Dock or Steam Scow Mansfield, capacity 300 tons,
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 Docks lighted with electricity and equipped with Steam Derricks.

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The CUDDY-MULLEN COAL CO., Cleveland

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**SPECIAL
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**GIVEN TO
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SHIPPING DOCK with Car Dumping Machine, also eight chutes
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Steam Lighters Carrying Derricks and Large Buckets in
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 Work Done Promptly.

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SOME BOATS ARE BADLY HANDICAPPED
 FOR WANT OF THE RIGHT KIND OF

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We have the right kind at our Amherstburgh Dock, and will take good care of
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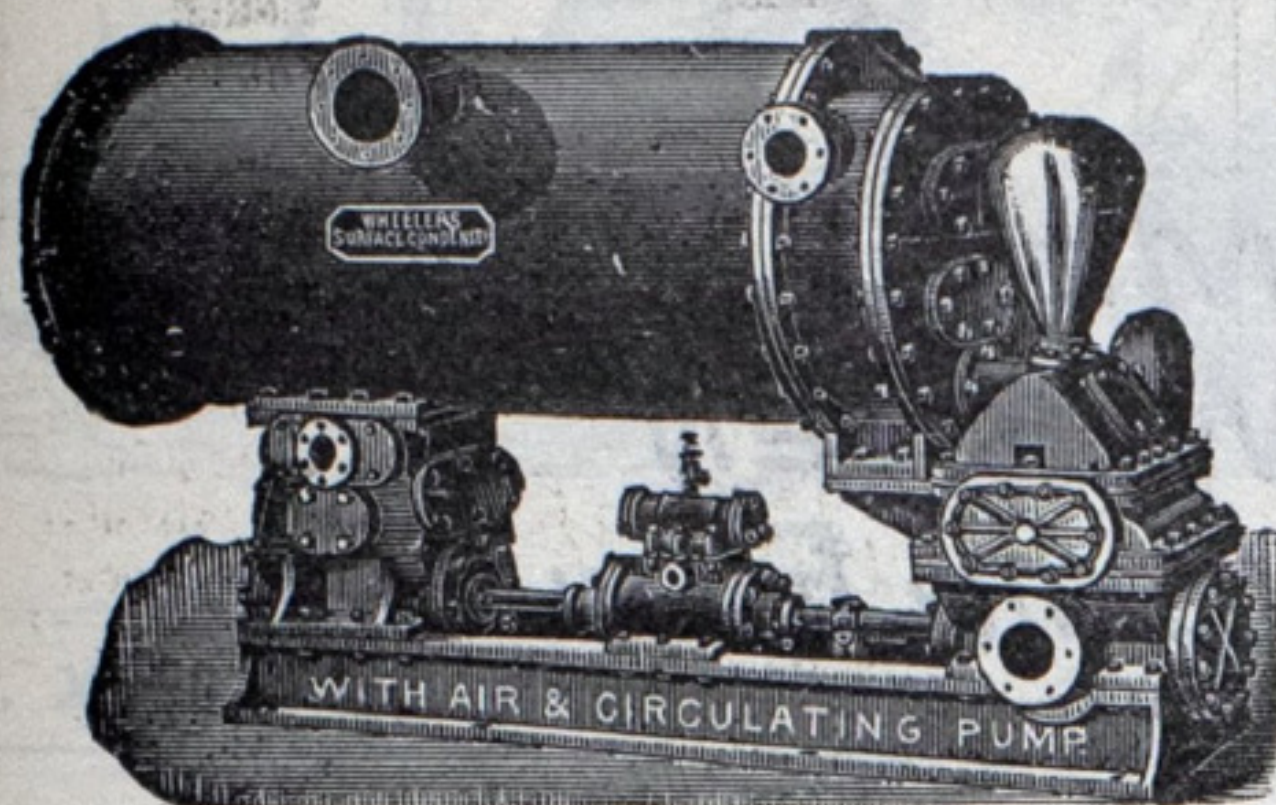
Office, 90 Griswold Street, DETROIT, MICH.

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39 & 41 CORTLANDT STREET, NEW YORK.

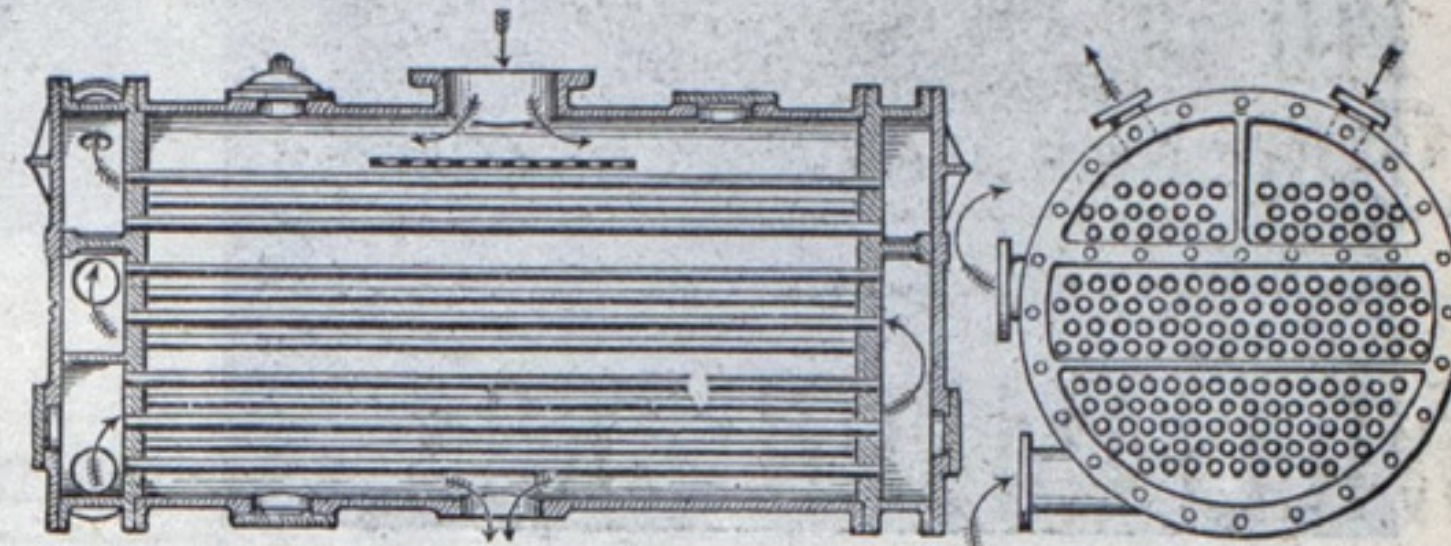
WHEELER'S IMPROVED SURFACE CONDENSERS

Mounted upon Combined Air and Circulating Pumps.

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Mounted on Combined Air and Circulating Pumps.

Sole Proprietors and Manufacturers of the
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FEED-WATER HEATER.
WHEELER FEED-WATER HEATER, AIR AND CIRCULATING
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Send for Pamphlet, "Machinery for Small Boats, etc."

PATENT COMBINED SURFACE CONDENSER AND
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Hardware,
Paints, Oils,*

And all classes of

VESSEL SUPPLIES.

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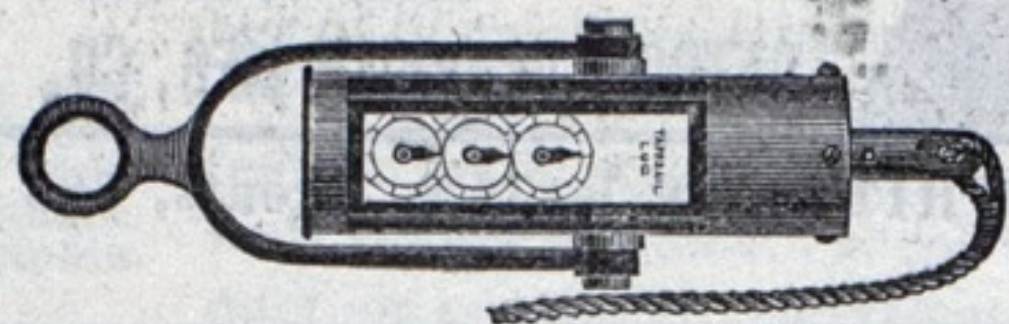
Corner Portage and Ashmun Sfs.

TELEPHONES: OFFICE NO. 7.
RESIDENCE NO. 4.

PROPOSALS.

OFFICE OF THE LIGHT-HOUSE BOARD,
Washington, D. C., December 1, 1896.
Sealed proposals will be received at this
office until Wednesday, the 30th day of
December, 1896, for furnishing the ma-
terials and labor of all kinds necessary
for the construction, equipment and de-
livery of three first-class composite light-
vessels and two steam tenders. Bids
will be received for each vessel or class
of vessel separately, or for all five of the
vessels, all to be delivered on the At-
lantic coast. An alternate bid will be
received for one of the three light-ves-
sels, to be delivered at San Francisco, Cal.
The said vessel or vessels must be
completed and delivered within ten cal-
endar months from date of the approval
of the contract by the Secretary of the
Treasury, and bidders are informed that
because of the urgent need of the speedy
delivery, the element of time to be con-
sumed in construction will be given due
consideration in determining the award
of the contract, and in each case the con-
tract will be awarded to the lowest best
responsible bidder. Each proposal must
be accompanied with a certified check
payable to the order of the Secretary of
the Treasury, in the sum of five thousand
dollars (\$5,000). The certified check of
the successful bidder will be retained
until the execution of a formal bond or
contract, and the approval of the same
by the Secretary of the Treasury, and
the certified checks of the unsuccessful
bidders will be returned immediately
after the proposals of the successful bid-
der have been accepted. Forms of pro-
posals, plans and specifications showing
what is required, can be had or seen by
applying to this office. The right is re-
served to reject any or all bids and to
waive any defects. JOHN G. WALKER,
Rear Admiral, U. S. N., Chairman.

THE BLISS TAFFRAIL LOG



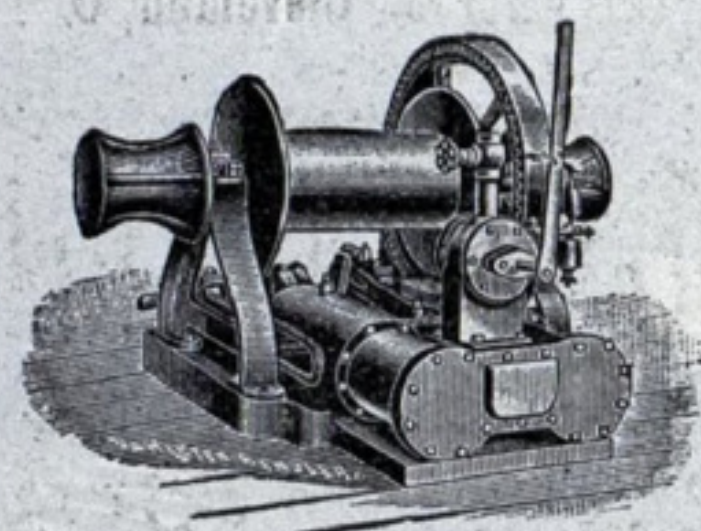
Over 10,000 have been sold since 1876. A portion are made to indicate
STATUTE MILES for use on the Lakes.

The Rotators are adjustable and made by a patented system which gives great
stability to the blades. Our Log is being closely imitated, and rotators bearing no
name of other marks are offered by the makers to use with our Logs as "just as
good as the Bliss rotator."—They are not just as good, either in durability
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Our rotators bear our name and the dates of four patents. For sale by
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JOHN BLISS & CO.,

128 FRONT STREET, NEW YORK.



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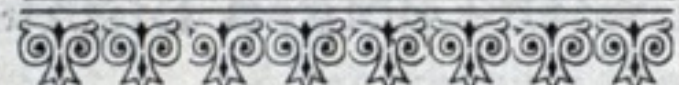
ALL KINDS OF

Machinery and Friction Hoists.

JACKSON & CHURCH, Saginaw, Mich.

Send for Prices
and Circulars.

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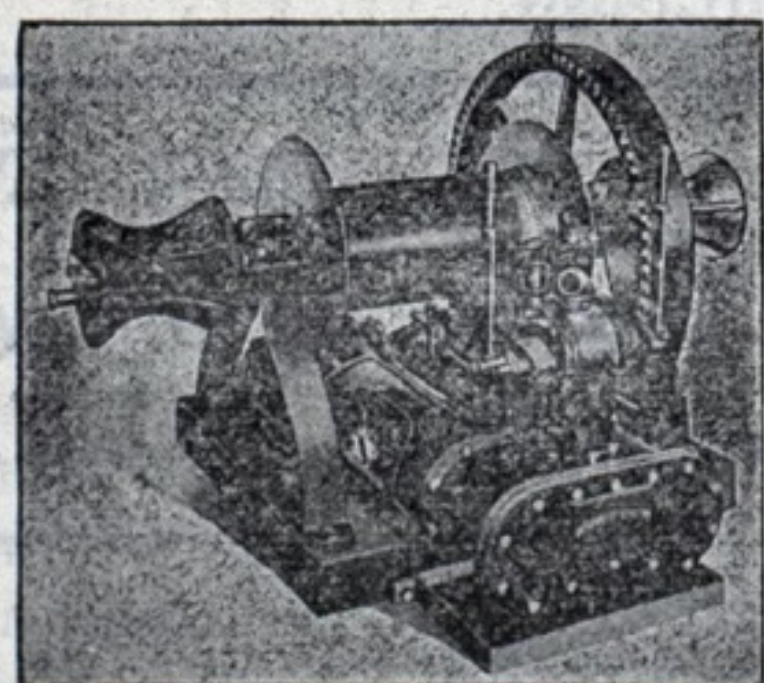


We build them in all sizes
from new and improved
designs. Every engine
thoroughly tested before
leaving our shop, and
guaranteed to be satisfac-
tory in every case. When
in want of a Hoist for

marine work, dock work, mining or any other pur-
pose, kindly permit us to name you prices. We know
we can please you.

MARINE IRON CO.,

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DECK HOISTS

Coal and Contractors' Hoists,
Steam Steering Gears and
Conveying Machinery
For all Purposes.

MANUFACTURED BY

W. H. WHITEMORE,

WRITE FOR PRICES.

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PRACTICAL SHIPBUILDER
IN STEEL, COMPOSITE
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ALL KINDS OF VESSELS DESIGNED.

Inspection and valuation of repairs
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BOOKS OF SAILING DIRECTIONS, ETC.

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I. J. KEENEN, RIVERSIDE STEAM BOILER WORKS.



Marine, Locomotive and Stationary Boilers.
Marine Work a Specialty.

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REPAIRING PROMPTLY ATTENDED TO.

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Tugs, Lighters, Steam Pumps, Hawsers, Hydraulic Jacks and Diving Appliances always ready

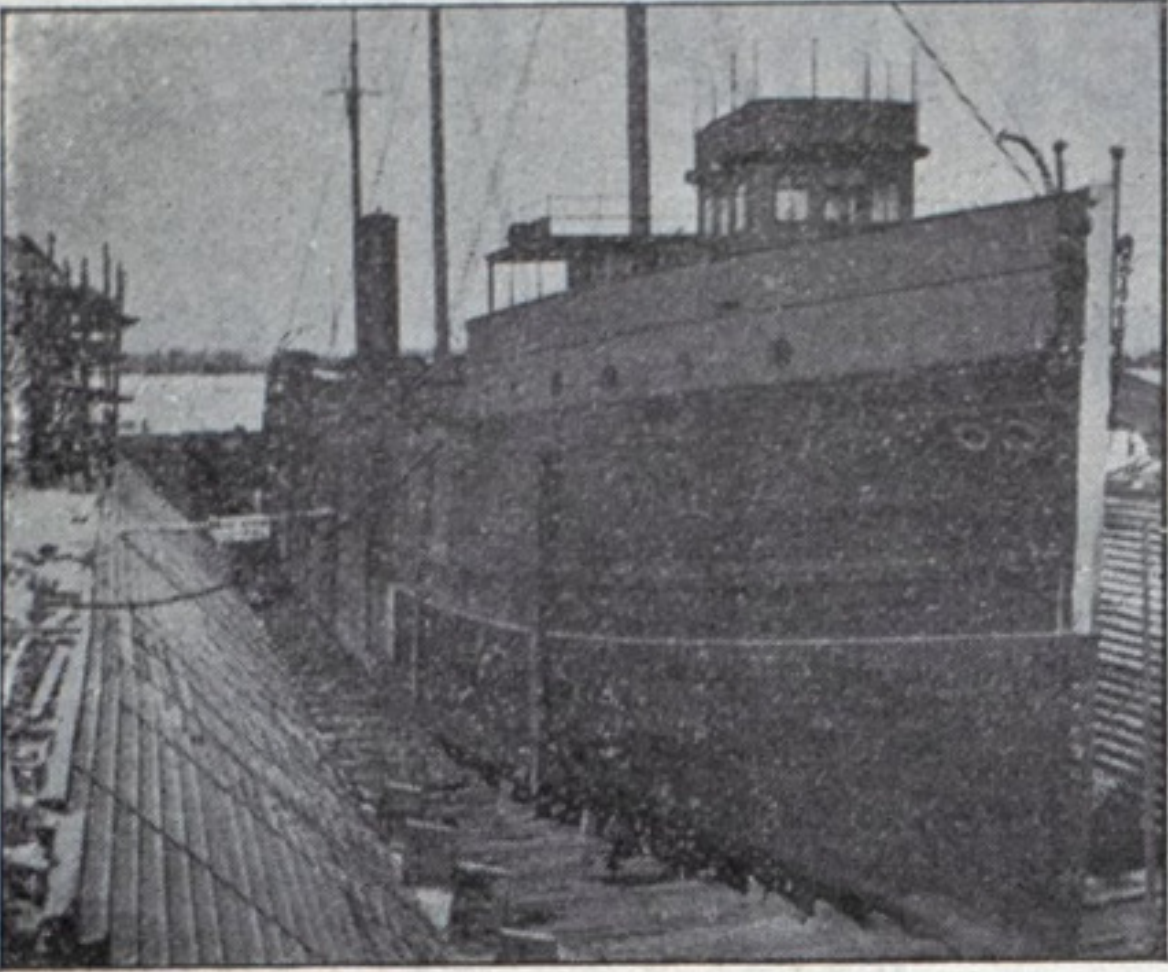
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TUG DELTA—Cylinder 20 by 22, Steam Pressure allowed, 105 lbs.

TUG OWEN—Cylinder 20 by 20, Steam Pressure allowed, 104 lbs.

CENTRIFUGAL PUMPS.

SEVEN AND FOURTEEN INCH SUCTION.



CRAIG SHIP BUILDING CO.,

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New Dry-Dock 450 feet long, 110 feet wide on top, 55 feet wide on bottom, 16 feet water on sill.

**METAL
AND WOODEN
SHIP BUILDERS.**

Repairs to Metal and Wooden Ships
A Specialty.

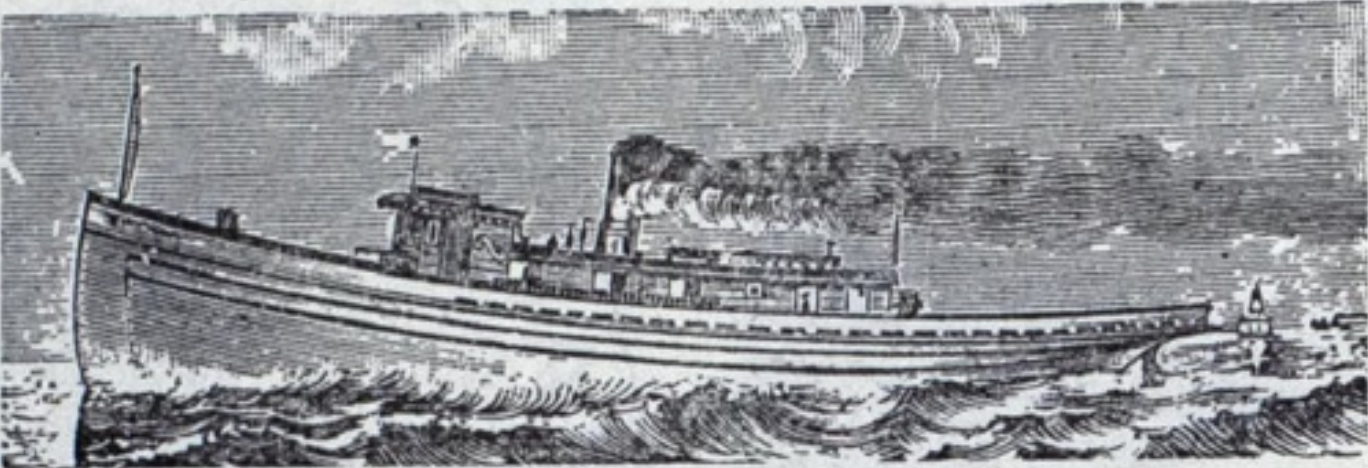
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J. A. SMITH, Sec'y.
J. R. SPRANKLE, Treas.

The Cleveland Tug Company,

First-class Tugs,
Steam Pumps,
Divers, Hawsers,
Lifting Screws,
Etc., furnished
Promptly on
Orders by Tele-
graph or oth-
erwise.



Steamers when
outside wanting
our Tugs, blow
one long whis-
tle and as many
short ones as
they want tugs.

OPEN DAY and NIGHT.
Long Distance Telephone 725.

OFFICE 23 RIVER ST.
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The "CINCINNATI" Automatic STEAM STEERING GEAR

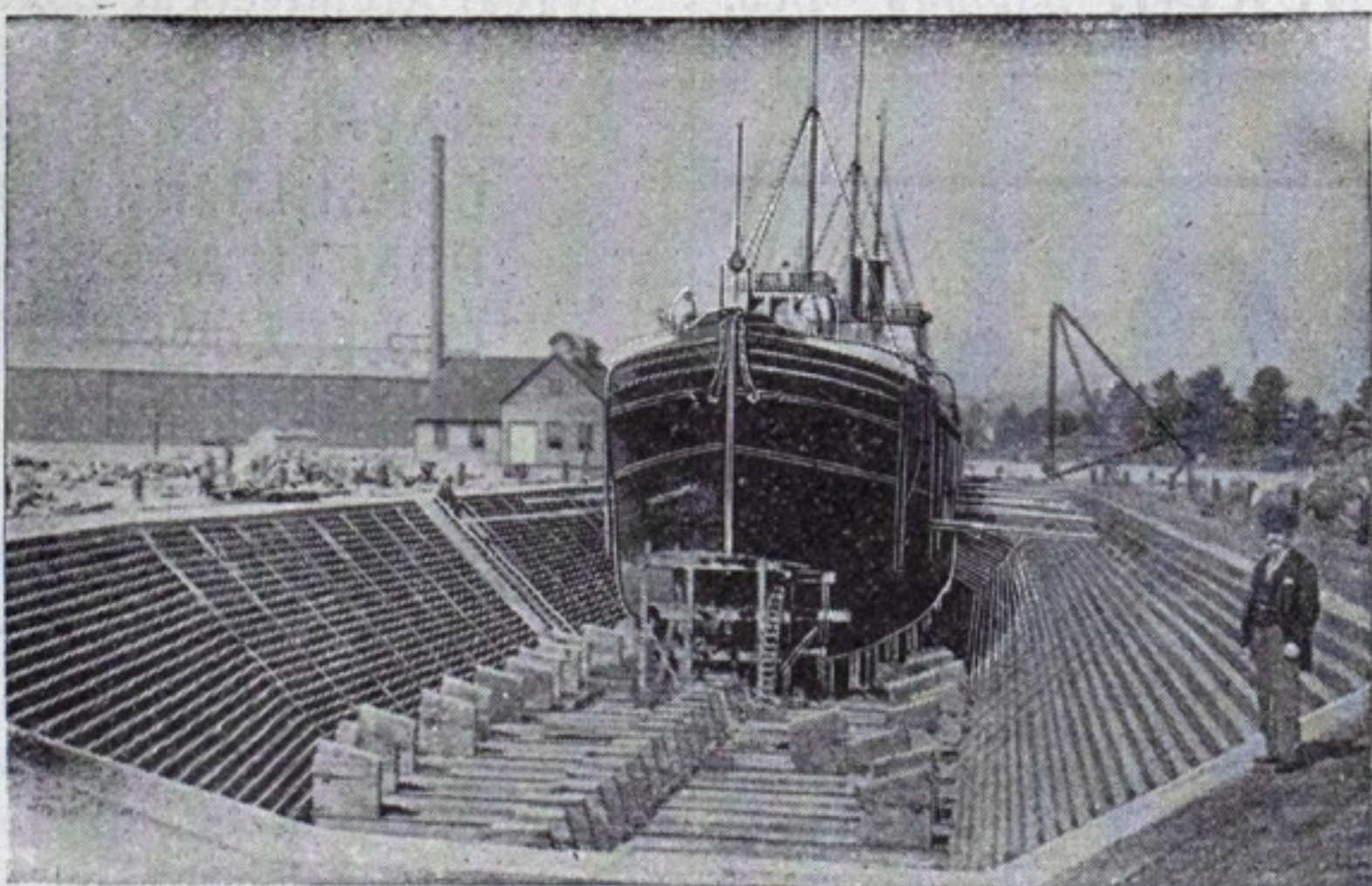
Simple, Powerful Machine. Noiseless and Sure. Send for Circular.
FRONTIER IRON WORKS, Detroit, Mich.,
AGENTS FOR THE LAKES.

AMERICAN STEEL BARGE CO. STEEL AND METAL SHIPS

OF ALL CLASSES BUILT ON SHORTEST POSSIBLE NOTICE AT OUR YARDS AT
WEST SUPERIOR, WIS., and also at EVERETT, WASH.

PHOTOGRAPH OF 300 FT. BOAT IN DOCK.

Plates and
Material
Always on
Hand to
Repair all
kinds of
Metal
Ships in
Shortest
Time.



Best
Quality
of Oak in
Stock for
Repairing
Wooden
Vessels
of all
Classes.

SIZE OF DOCK

Length, Extreme.....	537 feet.	Entrance, Top.....	55 feet 9 in.
Breadth, Top.....	90 " 4 in.	Entrance, Bottom.....	50 "
Breadth, Bottom.....	52 "	Depth over Sills.....	18 "

LARGEST DRY DOCK ON THE LAKES.

PRICES FOR REPAIRS AND DOCKING
SAME AS AT LOWER LAKE PORTS.

SUPERIOR, WIS.

A NUMBER OF PROPELLER WHEELS IN STOCK AT DRY DOCK.

A. GILMORE'S SONS,

DRY DOCKING
SHIP BUILDING
AND REPAIRING.

EAST SIDE, NEAR IRONVILLE.

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Dimensions of Dock, 236 feet long, 55 feet wide at top and 37 feet wide at gate.
Nine feet water over sill.

RATES OF DOCKING, Ten Cents per Registered Gross Ton for Vessel over 200 Tons.
Jig Mill and Planer in connection with Dock.
PHONE NO. 157.

Paint your Vessels with Superior Graphite Paint

NO BLISTERING, CRACKING OR SCALING.

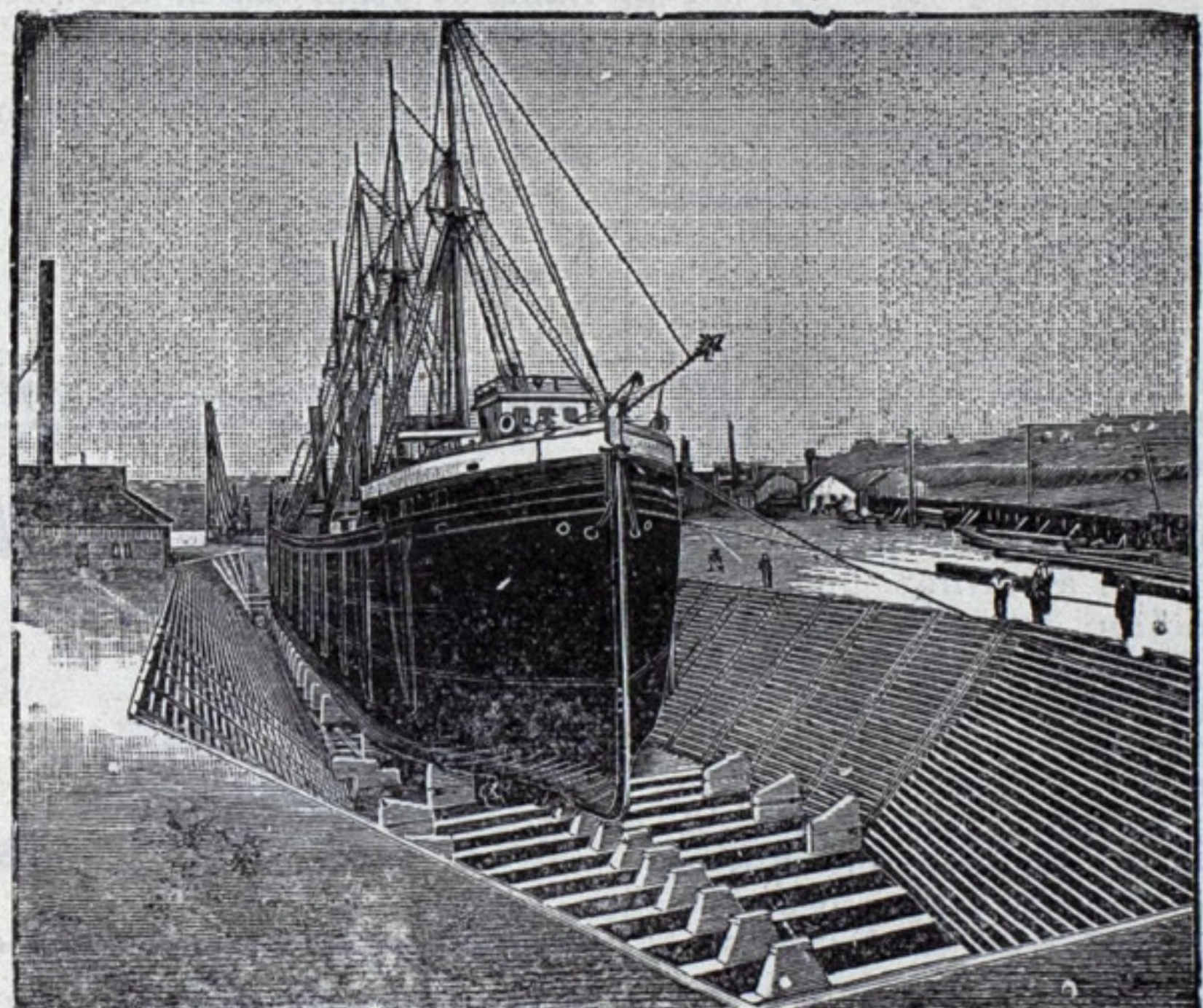
Made especially for Stacks, Decks, Sides, Hulls and Water Compartments.
Strictly anti-rust, and most durable and economical.

DETROIT GRAPHITE MFG. CO. 542 River St., Detroit, Mich.

WHITTON & BATES, Agents, 503 Perry-Payne Building, Cleveland, O.

THE SHIP OWNERS DRY DOCK CO.

Largest
DOCK
YARD
on the
GREAT
LAKES.



Capacity
with
Two Docks
to Dock
the
Largest
Ships on
the Lakes.

GENERAL REPAIR WORK PROMPTLY ATTENDED TO.

Being equipped with Lucigen Lights we do work at night as well as day.

TELEPHONE 1635.

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C. A. MACDONALD & CO.,

GENERAL MARINE INSURANCE AGENTS.

RIALTO BUILDING,

CHICAGO, ILL.

THOS. WILSON,

MANAGING OWNER WILSON'S TRANSIT LINE,

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Residence John Mitchell, 'Phone 3506.

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Nos. 501, 502 and 503 Perry-Payne Bldg., CLEVELAND, O.